II. — The Kwakiutl of Vancouver Island.

By Franz Boas.

Plates XXVII–LII.

CONTENTS.

E

i e, î, ê, a, ô, o u

ī ē, ë, ä, ā, â, ō ū

u

E obscure *e*, as in *flower*.

i e are probably the same sound, intermediate between the continental values of *i* and *e*.

î = *i* in *hill*.

ê = *e* in *fell*.

a has its continental value.

ô = German *o* in *voll*.

o u are probably the same sound, intermediate between the continental values of *o* and *u*.

ë a somewhat doubtful sound, varying greatly in its pronunciation among different individuals between *ē* and *ēi*.

ä = German *ä* in *Bär*.

â = *aw* in *law*.

ᵘ indicates that the preceding consonant is pronounced with *u* position of the mouth.

	Sonans.	*Surd.*	*Fortis.*	*Spirans.*	*Nasal.*	
Velar	g	q	q!	x	—	
Palatal	g(w)	k(w)	k!(w)	x̣(w)	—	
Anterior palatal	g·	k·	k·!	x·	—	
Alveolar	d	t	t!	s	n	
	(dz)	(ts)	(ts!)	—	—	
Labial	b	p	p!	—	m	
Lateral	ɻ	ʟ	ʟ!	ɬ	—	l
Laryngeal catch	ˀ	—	—	—	—	

h, y, w.

In this whole series the sonans is harder than the corresponding English sound. The surd is pronounced with a full breath, while the fortis is a surd with increased stress and suddenness of articulation. The sonans is so strong that it is easily mistaken for a surd.

The velar series are *k* sounds pronounced with the soft palate. *x* corresponds to *ch* in German *Bach*. The palatal series correspond to our *g* (hard) and *k*.

$\dot{x}$ is like x, but pronounced farther forward. $g^{\cdot}$ and $k^{\cdot}$ sound almost like *gy* and *ky* (with consonantic *y*); $x^{\cdot}$ is the German *ch* in *ich*. *d*, *t*, and *s* are almost dental. ɬ, ʟ, and ʟ! are pronounced with tip of tongue touching the lower teeth, the back of the tongue extending transversely across the hard palate, so that the air escapes suddenly near the first molars. In ɬ the tip of the tongue is in the same position, but the back of the tongue is narrower, so that the air escapes near the canine teeth. The sound is at the same time slightly less explosive than ʟ. *l* is the same as the English sound. ᵍ is a very faint laryngeal intonation. The exclamation-mark is used throughout to indicate increased stress of articulation.

I. — INTRODUCTION.

My studies of the Kwakiutl Indians, part of the results of which I present in the following pages, remain a fragment.

The beginning of my researches dates back to the year 1885. At that time, after my return from Arctic America, where I had devoted a year to the study of the Eskimo, it was my good fortune to work in the inspiring surroundings of the Royal Ethnographical Museum of Berlin, in close friendship with Albert Grünwedel, whose painstaking care in elucidating the historical relations of ethnographical phenomena, and whose artistic temperament left a lasting impression upon me; with Felix von Luschan, whose versatile genius embraces all sides of anthropological study with equal ardor; with Wilhelm Grube, whose studies of Chinese culture were carried on with a fine appreciation of their ethnographical basis; and under the leadership of Adolf Bastian and Rudolf Virchow, whose fame attracted anthropologists from all parts of the world, bringing us younger students into enviable contact with men of the most varied experience and opinions.

It so happened that at that time the extensive collections made by Captain Adrian Jacobsen in British Columbia and Alaska had arrived, and had to be catalogued and installed in the new museum building. My Eskimo studies had attracted my attention to the relation of this peculiar tribe to their southern neighbors, and my fancy was first struck by the flight of imagination exhibited in the works of art of the British Columbians as compared to the severe sobriety of the eastern Eskimo. From the fragmentary notes furnished by Captain Jacobsen we divined what a wealth of thought lay hidden behind the grotesque masks and the elaborately decorated utensils of these tribes. When, during the same year, Captain Jacobsen and his brother Fillip exhibited a group of Bella Coola Indians in Berlin, and opportunity was thus given to cast a brief glance behind the veil that covered the life of those people, and some of the general problems of the region began to loom up; when, furthermore, the brothers Aurel and Arthur Krause fascinated us with the tales of their observations made in Alaska in 1883 and 1884, the attraction became irresistible, and, with the financial aid of personal friends, I was enabled to visit the coast of British Columbia in the fall of 1886.

The first impression, however, was that of bewildering confusion; and before it was possible to attack the more interesting problems, the relationship of tribes had to be cleared up. The meagre results of my first journey brought me the opportunity to revisit British Columbia in 1888, following an invitation of Horatio Hale, then Editor of the Committee of the British Association for

the Advancement of Science for the Study of the Northwestern Tribes of Canada, which had been appointed at the Montreal meeting in 1884. The definite programme of Horatio Hale was a continuation of his old survey of the Pacific coast, made when as a young man he accompanied the Wilkes Expedition. This programme restricted the freedom of choice of the subjects of my studies, and prevented the thorough investigation of any of the more special problems which stood out more and more clearly in my mind as requiring intensive study, and the solution of which seemed likely to clear up the intricate history of the culture of northwestern America and northeastern Asia, and which might also be of importance for the elucidation of a number of fundamental anthropological questions.

The work that I had to do for the Committee of the British Association for the Advancement of Science was always hurried, partly on account of the limitation of means, partly on account of the great extent of territory that had to be covered on each trip. Furthermore, owing to the obligations imposed upon me by my position as a university teacher, my visits had to be made during the vacation time, in summer, a season not favorable for the best ethnological work on the North Pacific coast.

During these years, from 1886 to 1892, the information that was accumulating seemed to show that under the present conditions the Kwakiutl and Nootka offered the most promising fields of research, partly because they were less affected by the whites than other tribes, partly because they exhibited peculiar transitional stages, in which newly acquired customs appeared to have assumed novel significance, — a condition favorable to the study of the psychological and historical processes which are characteristic of the cultural development of comparatively primitive tribes.

It seemed that the World's Fair of Chicago in 1893 would give an excellent opportunity to further these studies, since Professor F. W. Putnam, Chief of the Department of Anthropology, intrusted me with the arrangements for an exhibit from Vancouver Island, which was to include the exhibition of a group of people from that area. We had a number of Kwakiutl there, in charge of my former interpreter, George Hunt; but, being overburdened with administrative duties, the summer passed without any possibility of an adequate exploitation of the rare opportunity except in so far as I succeeded in finding time to interest Mr. Hunt in methods of recording and collecting, which have yielded valuable results in later years.

In 1895 I revisited British Columbia under more favorable conditions. Through an arrangement with the Committee of the British Association for the Advancement of Science, referred to before, the U. S. National Museum, and the American Museum of Natural History, I was enabled to spend a longer period in British Columbia, and particularly to extend my visit over part of the winter, which gave me a chance to see new aspects of native life. I witnessed

the winter ceremonial, a better knowledge of which was obtained by later correspondence with Mr. Hunt, and inquiries made on the spot in later years.

In 1897 Mr. Morris K. Jesup organized, at my suggestion, a thorough investigation of the tribes of the North Pacific coast, the results of which are embodied in the series of volumes of which the present paper forms a part. It fell naturally to my share to continue the ethnological investigation of the tribes of Vancouver Island. It seemed to me well to make the leading point of view of my discussion, on the one hand an investigation of the historical relations of the tribes to their neighbors, on the other hand a presentation of the culture as it appears to the Indian himself. For this reason I have spared no trouble to collect descriptions of customs and beliefs in the language of the Indian, because in these the points that seem important to him are emphasized, and the almost unavoidable distortion contained in the descriptions given by the casual visitor and student is eliminated. For many years I have advocated a more extended application of this method in our studies of the American aborigines. That excellent results may be obtained in this manner is shown, for instance, by the description of the Ewe tribes of West Africa given by Mr. Spieth, and by the records of Samoan industries and customs published by a number of authors in recent years.

For the solution of the problem of the Jesup Expedition such thorough inquiry of a few tribes seemed indispensable; and, so far as time and funds permitted, no efforts have been spared to conduct the researches on the Kwakiutl according to the methods here outlined. Since the close of the Jesup Expedition I have myself continued the inquiry, with the assistance of Mr. Hunt.

Owing to the limitation of the size of the present series, it is at present impossible to publish more than a part of the results. It has seemed best to limit the subjects to be discussed, and to present these as fully as possible. I am well aware that many gaps and imperfections remain in this description. These are caused by the fact that since 1900 I have not been able to revisit the country, and to investigate certain questions that required additional studies. Wherever possible, I have endeavored to fill gaps by correspondence; but this is necessarily an inadequate means of obtaining full and trustworthy information.

I have not repeated information in regard to the location, population, and division of the tribe, which will be found in my previous publications, particularly in my report on "The Social Organization and the Secret Societies of the Kwakiutl Indians" (Report of the U. S. National Museum for 1895, pp. 311–738). My previously published notes on the Kwakiutl contained in the Reports of the British Association for the Advancement of Science are superseded by that publication and the present one.

June 1908. FRANZ BOAS.

II. — INDUSTRIES.

Work in Stone. *Flaking.* — There is no evidence that any stone-flaking to speak of was ever practised by the Kwakiutl. The only flaked specimen that I have seen is a rude oval stone knife of greenish quartzite ($\frac{16}{9983}$), about 35 mm. wide, 70 mm. long, and 8 mm. thick. The faces of the knife are quite flat, following the natural cleavage of the material; while the edges are flaked down very roughly, evidently by blows, without any attempt at a nice finishing of the cutting-edge. While flaked implements are found in great numbers in the shell-heaps and on village and camp sites on Puget Sound, on the west coast of Washington, in the interior of British Columbia and to a less extent in the delta of Fraser River and the adjoining regions, they are rather scarce on Vancouver Island, although they occur on the Saanich Peninsula and as far north as Comox. It seems likely that they have been introduced into this area by the immigration of Salish tribes.[1] The chipped implements that have been found are rather large and clumsy. The fine points of the Puget Sound region do not occur, or are at least rare here. Besides the specimen mentioned before, no chipped points have been found between central Vancouver Island and the coast of southern Alaska, while the Eskimo of Alaska use such points in great numbers.

Pecking. — All the stone implements of the Kwakiutl with which I am familiar were made by pecking, cutting, and polishing. Hard, tough stones that were used for implements were shaped by pecking and polishing, while some soft serpentinoids and serpentines were cut with knives and gritstones, and were later polished.

The Kwakiutl tribes of Fort Rupert and Nimkish River used for their stone implements hard pebbles of dolerite and similar rocks (tsEqu'ls), which are found, for instance, on the east end of Malcolm Island. The hardest and toughest pebbles that can be found, and that have a handy form, — somewhat cylindrical, and tapering to a rounded point, — are used for battering down the pebbles that are to be shaped. The battering-pebble is held in the hand loosely, and the battering-strokes are delivered slowly. Thus small fragments are removed, and this process is continued until the object has assumed the desired shape. Then the details are worked out with a smaller and lighter battering-stone, with which quite light strokes are given. The fragments removed are so small, that quite sharp edges can be produced (see Figs. 36, 39); and the battering-stone has a point small enough to allow of the making of

[1] See H. I. Smith, Archæology of the Gulf of Georgia and Puget Sound, Vol. II of this series, p. 437.

narrow grooves, such as are found in some of the more intricate forms (see Figs. 40 *a*, 42). In carefully finished implements the remaining roughness is smoothed down with a still lighter battering-stone. Then the implement is polished with wet sand, which on large surfaces is rubbed on with the palm of the hand; and the last finishing touches are given with dried skin of the tail of the dogfish. Hammers are also rubbed with catfish-oil, which gives them a lustre. The dust that is made by pecking is very injurious to the eyes.

Perforating. — To perforate a hard stone, a hole is pecked from each side, first with large hammer-stones, then with smaller ones. A small hard pebble of dolerite is placed in one of the depressions so made, and is struck with a hammer until the hole is completed. Gambling-stones (see Fig. 34) and war-clubs are the only perforated stones used.

Serpentines and other soft stones seem to have been perforated by drilling; at least, one gambling-stone found by Mr. Smith has on each side a conical depression which shows traces of drilling; and the two depressions are connected by a perfectly round straight hole, which can only have been made by a drill. The hole, however, looks so new, that possibly it may have been made rather recently.

Cutting and Grinding. — Chisels, axes, and adzes were made of rather soft serpentinoids (dzɛ́m^{g}wa). These were not pecked, but shaped by grinding on gritty stone, such as gneiss, disintegrated traps, etc. They were given their final polish in the same way as pecked implements. When in use, these blades were kept wet, because then the stone seems to be tougher.

War-axes were made of a very soft serpentinoid that was dug at Koskimo. This stone is so soft that it can be cut after it has been dug, but hardens later on.

Making of Stone Hammers. — The manufacture of stone hammers illustrates well the method of procedure in shaping an implement to be made of hard stone. The process was described to me as follows: —

For a carpenter's hammer (see Fig. 36) an oval pebble, round in cross-section, is selected. It is placed on the ground on an old blanket of yellow-cedar bark. The length of the hammer is one hand's breadth and two finger-widths for the shaft, and one finger-width each for the striking-head and the top. This length — one hand's breadth and four finger-widths — is measured off, and the upper and lower ends are marked with charred fungus or a soft marking-stone. The pebble is then put on end, and the upper end is battered down to the line marking the upper surface of the hammer. The end is made quite level. Then the stone is turned round, and the opposite end is battered down in the same manner. Then a circle four finger-widths in diameter is drawn on the flat top, and one five finger-widths in diameter is drawn on the surface which is to form the striking-head. These circles are drawn with a soft stone attached to the end of a strip of cedar-bark, which is held in the

centre of the level surface by a small stick, thus performing the services of a pair of compasses. The stone is next battered down from the outside to the circumference of these circles, and two deep grooves are pecked all around at the upper and lower ends of the shaft. Then longitudinal grooves are pecked into the stone between the circular grooves until that whole portion which is to form the shaft is fluted. Then the ridges between the flutings are battered down in the same manner until the thickness is so far reduced that the hand can easily grasp the shaft. The shaft must be perfectly cylindrical and very smooth, so that the hand can slide up and down the shaft when delivering the blow. For this reason the length of the shaft must be two finger-widths over one hand-breath. After the hammer has received its general shape, it is smoothed with a smaller hammer. The top is made three finger-widths in diameter; the striking-head, four finger-widths. When the hammer is finished, it is rubbed with catfish-oil, which gives it a lustre. A good stone hammer is worth about four blankets of yellow cedar.

Mr. Harlan I. Smith has collected at the mouth of Nimkish River a pebble which corroborates to a considerable extent the statements contained in the preceding description. The specimen (Fig. 32) is a pebble which has been battered down at one end so that it is perfectly flat; and a groove has been started all round it, forming a neck. A certain amount of work may also be observed along one side of the pebble. It seems to have been discarded because the opposite end was not thick enough for finishing the work properly. In this specimen there is no attempt at rounding off the flat end, as stated in the description of the process given by the Indians. A number of completed hammers show oblong or quite irregular heads at the striking-face, so that presumable the circle indicating the outlines of the surface was not always made.

Fig. 32 ($\frac{16}{6084}$). Unfinished Hand-Hammer. Length, 22 cm.

Another specimen (Fig. 33) corresponds still better with the description. It shows flattening at both ends and the groove around one end. The lower end, however, has also been worked to a certain extent, so that there is a slight tapering from the striking-head to the shaft. It is not impossible that the implement in the form in which it is found now may have served as a weight.

Still another specimen in the collection ($\frac{16}{8261}$) illustrates the process of

making stone hammers. It is a rounded pebble about 25 cm. long, and about 13 cm. by 10 cm. thick in the middle, the cross-section being oval. Both ends are flat, having been battered down so as to form the striking-head and top. They are oval in form, the diameters of the one being 8 cm. and 6 cm.; those of the other, 6.5 cm. and 6 cm. There is no attempt at grooving this stone under the places that are to form the striking-heads; but the sides are fluted by the process of battering down in straight lines, as has been described before. Evidently the attempt was made here to reduce the thickness of this stone in the middle before beginning actual work on the shaft.

Fig. 33 ($\frac{16}{7817}$). Unfinished Hand-Hammer. Length, 18cm.

There is still another incomplete specimen from Koskimo ($\frac{16}{8262}$), made of a pebble, which is perfectly flattened on one end, while on the opposite end the sides of the pebble seem to have been trimmed down to a cylindrical form, and meet the natural, rounded end of the pebble. Presumably this specimen represents the beginning of a hammer with lateral striking-head (see Fig. 40), which was used by the Koskimo and Kwakiutl.

The process of grooving may also be observed on a number of peculiar gambling-stones, which are found in very great numbers on the village sites of ʟ̂iksi'wē[s]. Fig. 34 represents three of these stones. The fluting of *a*, as shown

Fig. 34, *a* ($\frac{16}{5850}$), *b* ($\frac{16}{6031}$), *c* ($\frac{16}{5857}$). Gambling-Stones. Length, 15 cm., 10.5 cm., 15.5 cm. Collected by Harlan I. Smith.

in the illustration, particularly the transversal fluting, is a little stronger than it appears in the specimen itself, the cross-section of which is rounded rectangular, one of the edges being along the line where transversal and longitudinal flutings

meet. The specimen shown in Fig. 34, *b*, has flutings only on the front side, the back being left unmodified. The fluted gambling-stone represented in Fig. 34, *c*, is also rounded rectangular in cross-section, and shows flutings only on the rather flat front. One end of the stone is flattened by battering.

Stone carvings representing faces are all made by battering grooves into the surface of the stone,[1] or by elaborating the forms of the whole object by pecking and battering (see Fig. 40, *a*).

Types of Hammers. — Only three types of hammers are used by the Kwakiutl. The most common type is the hand-hammer (pɛ'lpɛlq) with flat striking-head and flat top; but, besides this, a hand-hammer with lateral striking-head, and a two-handed pile-driver, are used. The Kwakiutl claim that grooved and preforated stone hammers with long handles (dēẋumā'nō), like those of the Bella Bella and other northern tribes, were not made. It is said that about 1840 a hammer of this type was introduced through the intermarriage of a Kwakiutl and a Bella Bella; and the hammers are still called "Dō'qwa-is' hammers," from the name of the person who first introduced them. Their use has always remained confined to Dō'qwa-is and to his descendants. One specimen of this kind (Fig. 35) in the collections of the Ethnographical Museum in Berlin was obtained by Mr. A. Jacobsen in 1884 in one of the Kwakiutl villages. It is the only specimen that I have seen. Mauls made of a piece of a small tree, with a branch for handle, such as are used by the Tlingit, are also not used.

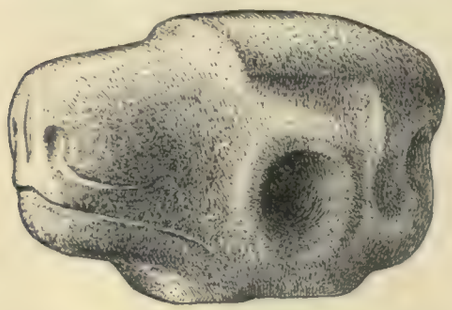


Fig. 35. Stone Hammer (Royal Ethnographical Museum, Berlin, No. IV A 588). $\frac{3}{8}$ nat. size.

Fig. 36, *a*, *b* ($\frac{16}{8421}$). Hand-Hammers. Length of *b*, 17.5 cm.

Hand-Hammers or Pestles. — The typical form of the hand-hammer is shown in Fig. 36, *a*. The sizes of the hammers vary considerably, but different sizes are remarkably uniform. Four specimens ($\frac{16}{2225}$, $\frac{16}{2228}$, $\frac{16}{8421}$, $\frac{16}{8617}$) are all very nearly 17 cm. high, will a striking-head nearly 9 cm. in diameter and a top measuring nearly 7 cm. Both striking-head and top are often

One of these is shown in Fig. 36, *b*.

[1] See F. Boas, The Social Organization and Secret Societies of the Kwakiutl Indians (Report of the U. S. National Museum for 1895, Plates 23–26, Fig. 61, p. 441).

slightly convex. Pestles which are used in the house for delicate wood-work are much smaller (Fig. 37). Three of these measure from 8 cm. to 10 cm. in height; the heads, from 5 cm. to 7 cm., and from 4 cm. to 5 cm. respectively,

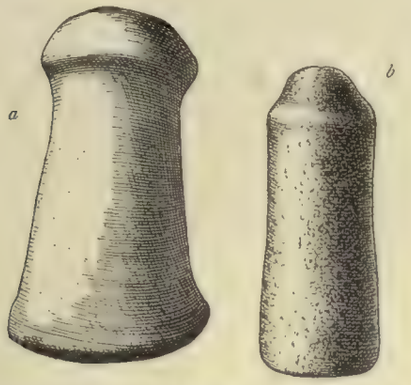


Fig. 37, *a* ($\frac{1}{2}\frac{6}{2}\frac{1}{\pi}$), *b* ($\frac{1}{\pi}\frac{6}{6}\frac{1}{2}\frac{1}{2}$). Hand-Hammers for House Use. Length, 13.5 cm., 11 cm.

Fig. 38 ($\frac{1}{\pi}\frac{6}{7}\frac{1}{\pi}$). Hand-Hammer with Concave Striking-Head. Length, 14 cm.

in diameter. These small pestles are also used in the house for mashing berries and preparing various kinds of food that has to be pounded. An exceptional type of hand-hammer is represented in Fig. 37, *a*. Its striking-end is flat, and is not set off from the shaft, but tapers directly upwards towards a neck. The top has the form of a truncated cone, the upper end being battered down to a slight extent. There is one other small specimen (Fig. 37, *b*) in the collection the form of which is slightly related to that of the preceding one. There is no striking-head; and the shaft is almost cylindrical, but slightly narrower under the top, which is conical, the tip being formed by the natural surface of the pebble. The sides of the conical top are made slightly concave by a groove which is pecked all around it.

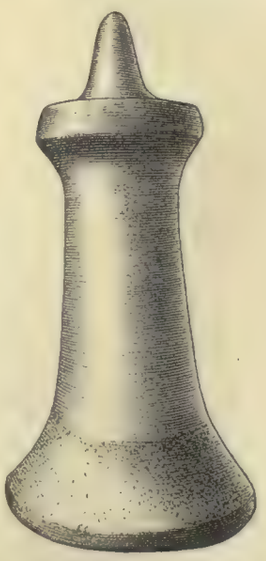


Fig. 39 ($\frac{1}{\pi}\frac{6}{3}\frac{1}{8}\frac{1}{5}$). Hand-Hammer with Conical Top. Length, 19 cm.; diam. of striking-head, 9.5 cm.; diam. of head, 6.5 cm.

There is one rather remarkable group of hand-hammers or pestles which have a deeply concave hollow in the middle of the striking-head, evidently the result of their being used for battering chisels or wedges. One of these specimens is represented in Fig. 38. This specimen and another one of the same kind are characterized by the remarkable flare of the shaft towards the striking-head. Both are about 13 cm. in diameter. It would seem that hammers of this type are used more commonly by the Koskimo than by the people of the east coast.

Only one specimen (Fig. 39) has been collected among the Kwakiutl which

is identical in type with the hand-hammers found in the shell-heaps of the Lower Fraser River[1] except that the nipple on the head is more slender. According to information obtained from the natives, the nipple was used for expanding the cedar-withe crowns of wedges; while, according to another statement, the hammer was used in war. Both of these statements, of course, may be correct.

Hammers with Lateral Striking-Head. — Of quite different type are the hammers with lateral striking-head, two of which are represented in Fig. 40. The first of these (*a*) two specimens is particularly interesting. Its under side is perfectly flat, except that it

Fig. 40, *a* ($\frac{1}{5}\frac{6}{8}\frac{6}{5}$), *b* ($\frac{1}{6}\frac{6}{6}\frac{6}{5}$). Hand-Hammers with Lateral Striking-Head. Length, 19 cm., 17 cm.; *b* collected by Harlan I. Smith.

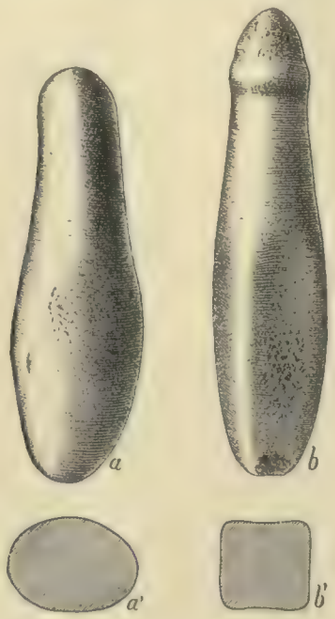


Fig. 41, *a* ($\frac{1}{7}\frac{6}{7}\frac{6}{7}$), *b* ($\frac{1}{7}\frac{6}{7}\frac{6}{4}$). Hand-Hammers with Lateral Striking-Head. Quinault. Length, 24 cm., 27 cm.

is concave about under the middle of the thickened head. Presumably this concavity is due to use. At the same time the lowest end of the hammer is somewhat flattened and battered, giving evidence that it has also been used as a pestle. The broad striking-head of the hammer has been given the shape of an animal, the two eyes and the nostrils being distinctly indicated. The second specimen (*b*) was found in ʟîksī'wē[s]. In this specimen also the lower side is slightly flattened, and shows evidence of use under the broad striking-head. At the same time the lower end of the implement is battered, showing evidence of use. The handle is so thick that this implement must have been much less effective than the ordinary hand-hammer which is so characteristic of the whole region.

[1] See Smith, Shell-Heaps of the Lower Fraser River, Vol. II of this series, Fig. 23, p. 156.

These hammers with lateral striking-head are evidently related to similar implements from neighboring regions. Hand-hammers with lateral striking-heads were used by the wood-workers on the west coast of Washington, where Professor Farrand collected a set of two of these implements (Fig. 41). The former of these two specimens is rounded in cross-section, but shows evidence of having been used as a striking-hammer. The second specimen

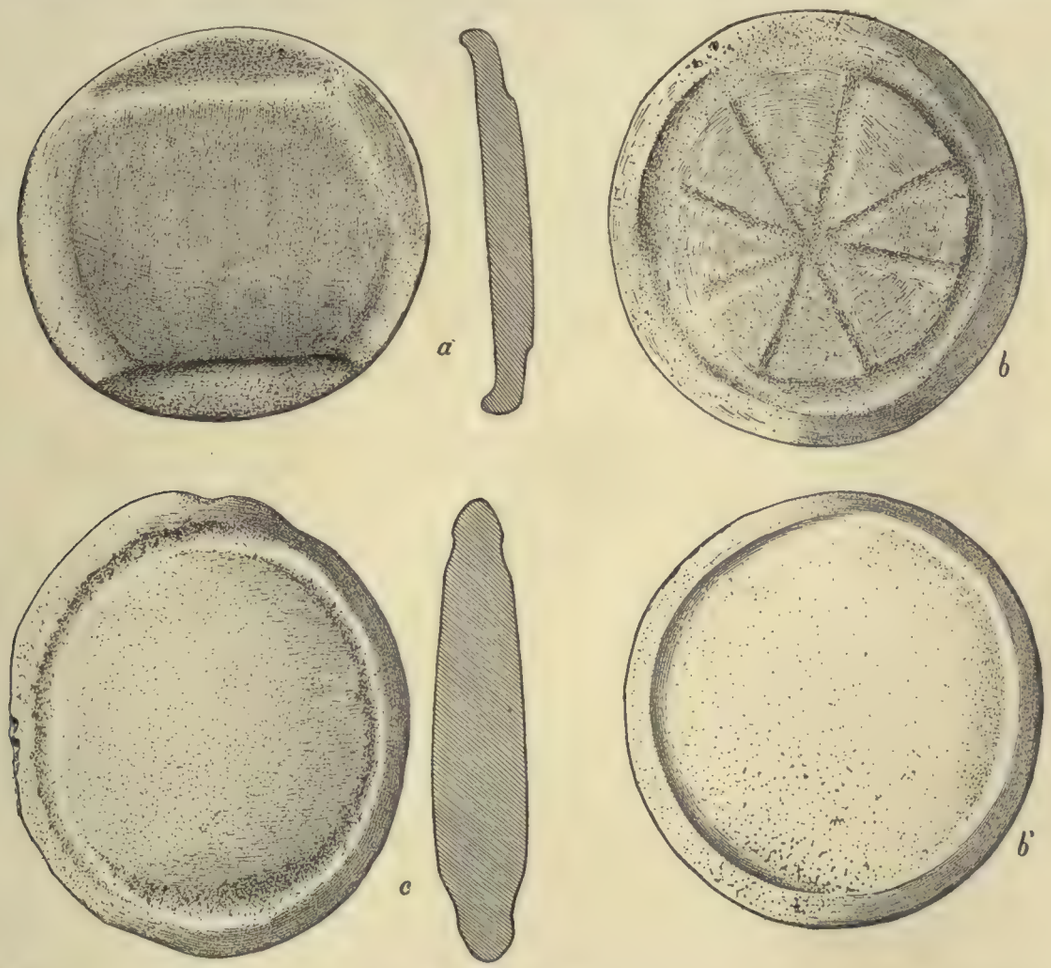


Fig. 42, *a* ($\frac{1}{15}\frac{6}{15}$), *b* ($\frac{1}{15}\frac{6}{10}$), *c* ($\frac{1}{5}\frac{6}{2}\frac{6}{5}$). Pile-Drivers. Diameter: *a*, 30 cm.; *b*, 34 cm.; *c*, longest diameter 37 cm.

is carefully squared, and shows evidences of use particularly on two surfaces which are opposite to each other. Other hand-hammers with lateral striking-face have been found by Mr. H. I. Smith on the Yakima Reservation; and some from the Lower Columbia Valley have been figured by him.[1] No hand-hammers with lateral faces are known to me from the region north of Smith Inlet, British Columbia.

[1] See American Anthropologist, N. S., Vol. VIII, pp. 298 et seq., Plate XXIII.

Pile-Drivers. — Pile-drivers (dē'gwayu) are two-handed hammers used solely for driving stakes into the ground, — a kind of work that is particularly required in the making of fish-weirs. The pile-drivers of this area show a number of sharply localized types. Those of the Kwakiutl are made of dolerite. They are all round (Fig. 42). The lower surface is generally hollowed out, and on the upper side occur depressions, so that the two hands can easily and firmly grasp the rim of the stone. The upper side of the pile-driver is sometimes decorated, as in Fig. 42, *b*. The weights of the specimens here represented are 24.5 lbs., 30 lbs., 31 lbs. The pile-drivers of the Bella Coola are made of serpentinized trap. They are elongated in shape. They have depressions for the fingers on the lower side, for the thumb on the upper side. The upper side is often carved in the shape of a face, for the eyes of which the thumb-depressions are utilized. These hammers are cut off square at the end near which they are held (Fig. 43). Only one of them is cut off square at the opposite end. Those here represented weigh 27.5 lbs., 26.5 lbs., 30 lbs. and 24.8 lbs. respectively. Those of the Quinault are made of diabase, and have a handle which is distinctly set off from the striking-head (Fig. 44). The two specimens here represented weigh 13 lbs. and 12.5 lbs. respectively.

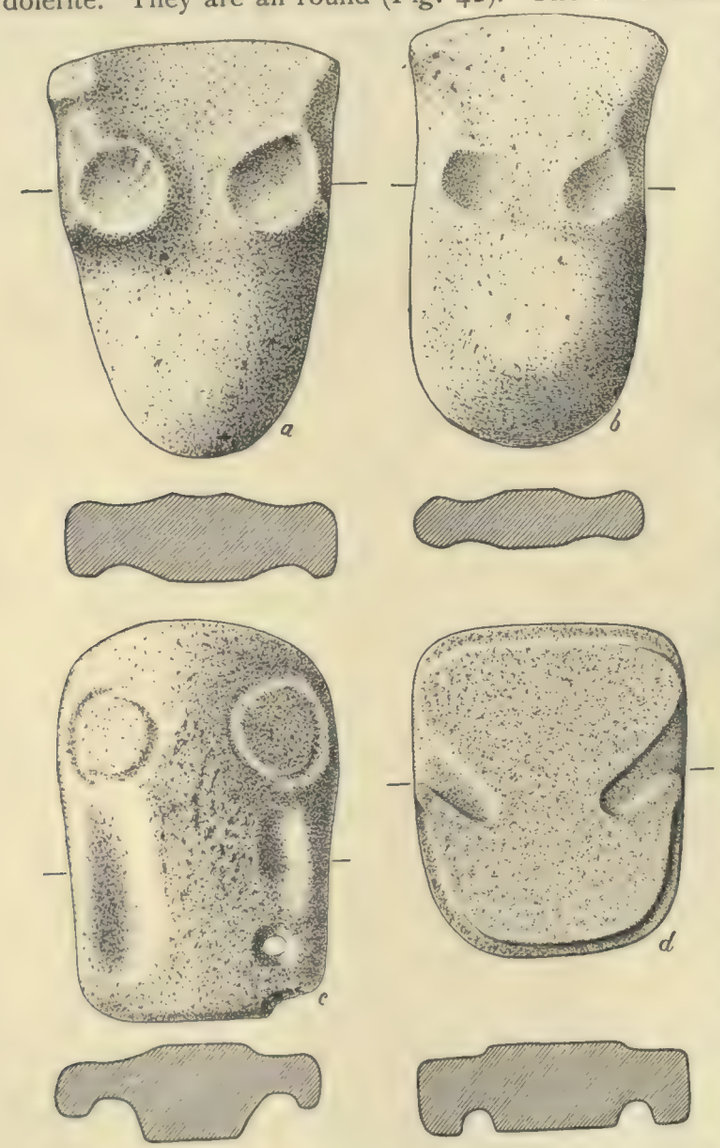


Fig. 43, *a* ($\frac{1}{10}\frac{6}{00}$), *b* ($\frac{1}{11}\frac{6}{00}$), *c* ($\frac{1}{13}\frac{6}{00}$), *d* ($\frac{1}{10}\frac{6}{01}$). Pile-Drivers. Bella Coola. Length, 37 cm., 38 cm., 29 cm., 35 cm.

Tools for Wood-Work. — The principal tools used for wood-work are, besides the hammer, which has been described, adzes, chisels, drills, wedges, and carving-knives. The material for the blades of adzes and chisels are serpentinoids (dzɛ́m^{g}wa) or bone. The material for drill-points seems to be exclusively bone. Wedges are made of yew-wood. So far as I am aware, wedges made of elk-antler, such as are commonly found in the Fraser River delta and also among the Coast tribes of southern Alaska, were hardly ever used in northern Vancouver Island and the neighboring regions. The large, heavy, grooved axes which are tied to long handles, and which are characteristic of the northern tribes of British Columbia, are not found among the Kwakiutl.

Fig. 44, *a* ($\frac{16}{1\,0\,5\,6}$), *b* ($\frac{16}{1\,0\,5\,7}$). Pile-Drivers. Quinault. Length, 34 cm.

Adzes and Chisels. — It seems that all adze blades were flat, and made of soft stone or bone. Most of them are quite long, and sharpened from both sides (Fig. 45). Most of them are more than 14 cm. long. In some cases the inclination of the sharpened edge is quite steep. In other cases the sharpening is very gradual and even on both sides. Chisel-blades (Fig. 45, *c*) are much shorter, and, comparatively speaking, stouter, than adze-blades. They varied from 2 cm. to 3.5 cm. in width, and most of them were less than 7 cm. in length, although a few long and narrow blades are also found. There is no evidence that these short chisels were hafted in antler forehafts, such as have been found in excavations in the Fraser River region,[1] and such as also occur among

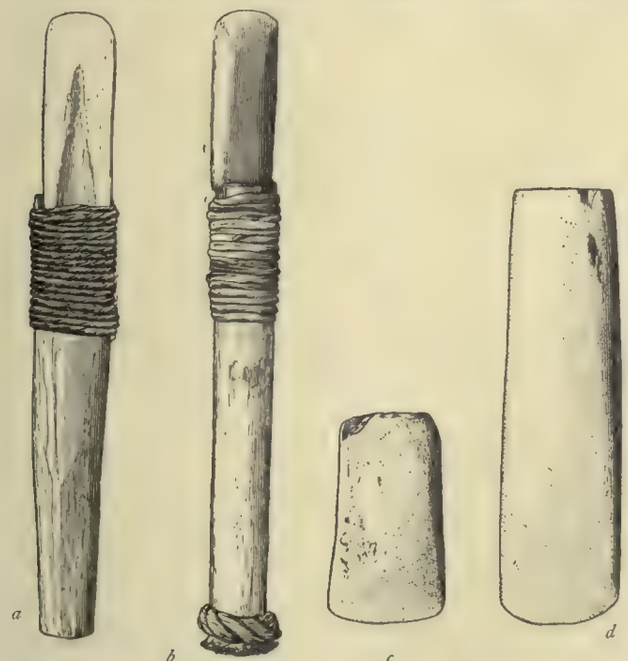


Fig. 45, *a* ($\frac{16}{1\,1\,5\,7}$), *b* ($\frac{16}{1\,1\,2\,7}$), *c* ($\frac{16}{2\,2\,2\,8}$), *d* ($\frac{16}{2\,2\,3\,0}$). Chisels, and Chisel and Adze Blades. Length, *a*, *b*, 22 cm.; *c*, *d*, 6.5 cm., 15.5 cm.; thickness of *d*, 1.3 cm.

[1] See Smith, Shell-Heaps of the Lower Fraser River, Vol. II of this series, p. 164.

the Alaskan Eskimo, and at Saanich, Comox, and Puget Sound.[1] It seems that the bone points were also cut and shaped with gritstone.

The handles of chisels (q!a'ldayu) were made of yew-wood; the butt-end was furnished with a crown of cedar-twigs to prevent its splitting. The blade-end was cut out on one side (Fig. 45, *a*) to receive the stone blade, care being taken that the cut fitted the shape of the particular stone as nearly as possible. The side which had been cut out was then overlaid with a splint, which also fitted the stone blade. This splint extended some distance beyond the lowest end of the blade, and acted as a splice when the wrapping was applied. The place for the wrapping was generally trimmed down from the outside. The wrapping was made either of split spruce-root or of thong made of deer-hide. It was put on in several layers, and the ends were fastened by being tucked under and drawn tight. The chisel had a number of handles of different lengths. In starting work a very short handle was applied; and when a hole was being made in a large tree, handles were used of increasing length with increasing depth of the hole. Since a considerable length of handle made the strokes of the chisel less effective, the attempt was made to work with as short a handle as possible. The stone blades become dull very easily, and it was customary to dip them frequently in water while they were being used. This was supposed to make the stone tougher.

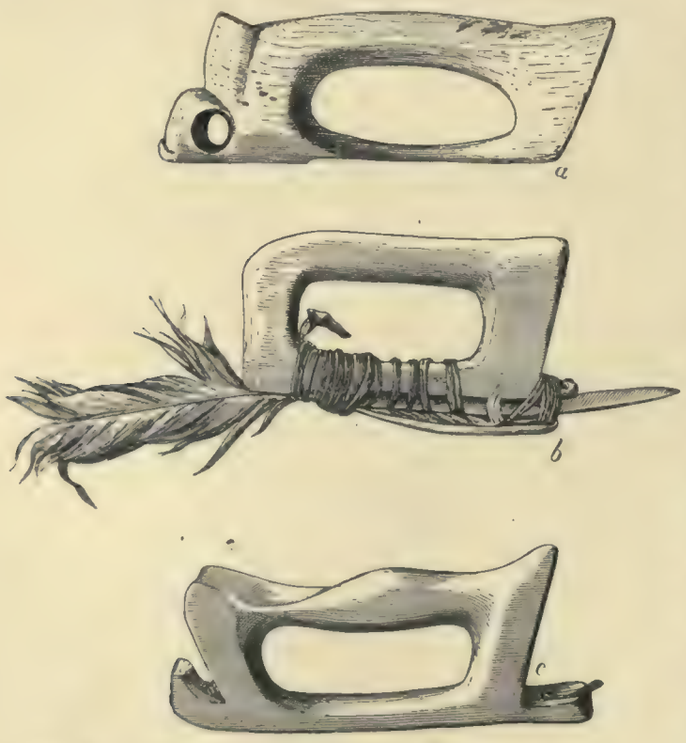


Fig. 46, *a* ($\frac{1}{11}\frac{6}{8}\frac{8}{8}$), *b* ($\frac{1}{8}\frac{6}{9}\frac{8}{3}$), *c* ($\frac{1}{6}\frac{6}{8}\frac{8}{8}$). Adzes and Adze-Handles. Length, 19 cm., 13 cm. (handle), 18 cm.

It is claimed that only one type of handle was used for the adze (k·!ĭ'mɬayu, Fig. 46). The handle is generally made of crab-apple or willow wood. The lower side of the handle is flat. Those used with a stone blade (Fig. 46, *a*) have the whole lower surface flat, and a shoulder near the rear

[1] See Smith, Archæology of the Gulf of Georgia and Puget Sound, Vol. II of this series, pp. 314, 342, 343, 377.

end, against which the stone blade rests. Those used with a bone blade have generally a groove hollowed out on the lower surface at the blade-end, while the extreme end towards the blade is left flat. The bone blade is slightly curved upward, and rests against the rear end of the groove. It is firmly tied to the handle with sinew or other tough string; and under its lower side, quills are tied in (Fig. 46, *b*), which increase the elasticity of the implement. These feathers were also used with stone blades, as shown by a specimen collected among the Nootka. In this specimen the stone blade is further protected, and the elasticity of the fastening increased, by the insertion of a small cedar wedge under the blade (Fig. 47). The feather fastening occurs occasionally,

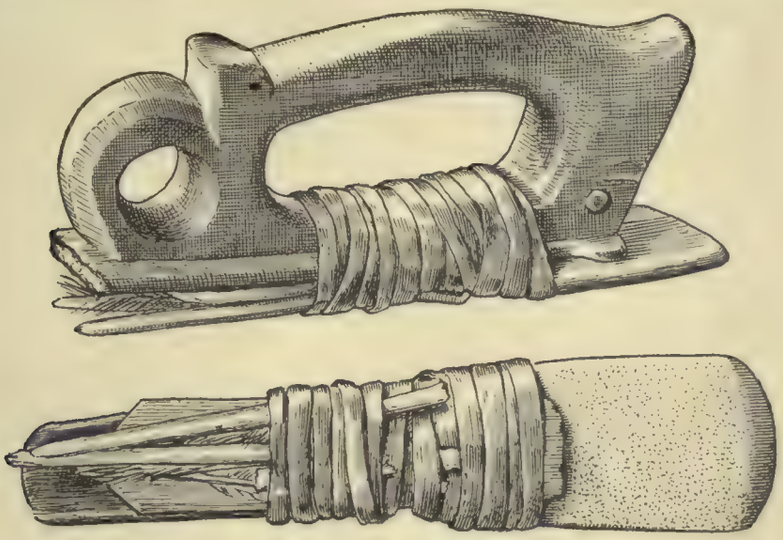


Fig. 47. Adze. Nootka. (Royal Ethnographical Museum, Berlin, No. IV A 2020.) ½ nat. size.

however, also in adzes with iron blades. The modern iron blades are often cut out of axe-blades. The form of the handle is fairly uniform, but the decoration shows considerable variation. I have, however, not seen any specimens decorated with animal figures, which occur frequently among the adze-handles of this type of the Nootka. These are also made either of hard wood (Fig. 48) or of bone of whale (Fig. 49).

Drills. — Drills (sɛlɛ'm) vary considerably in size. They consist of a bone point more or less quadrangular in cross-section, which is hafted in a slightly tapering handle made of cedar-wood. The tang of the bone point is always square; so that when the drill is twirled, it will not become loose in the haft. The quare tang is inserted in the haft by cutting out a square groove from one side, into which the bone point is inserted. The open side of the groove is covered again by a small piece of cedar-wood which has been whittled down to the proper shape. Then the end is wrapped with a piece of bark of the

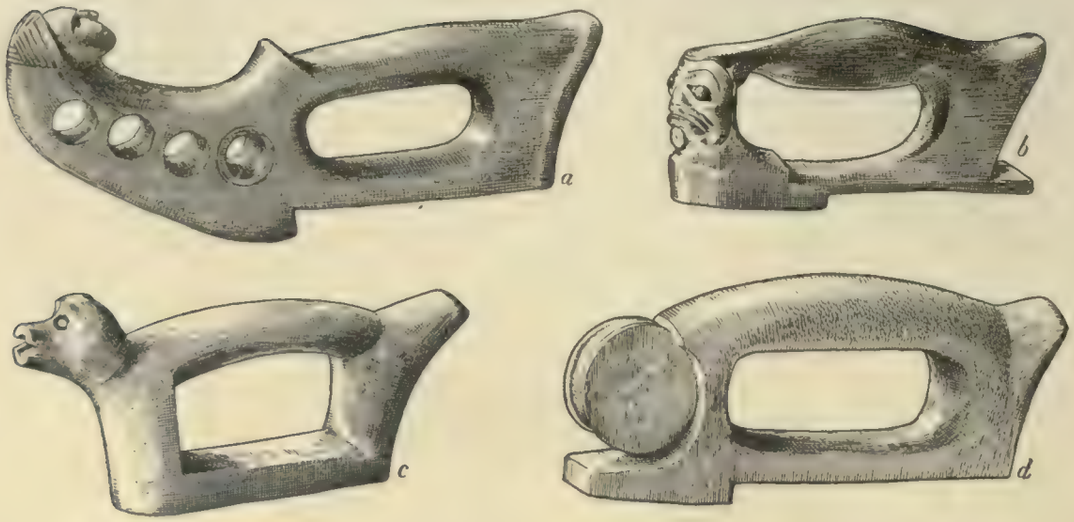


Fig. 48, *a–d*. Adze-Handles made of Wood. Nootka. (Royal Ethnographical Museum, Berlin, Nos. IV A 2015, 2025, orig. 702, 2016.) $\frac{3}{8}$ nat. size.

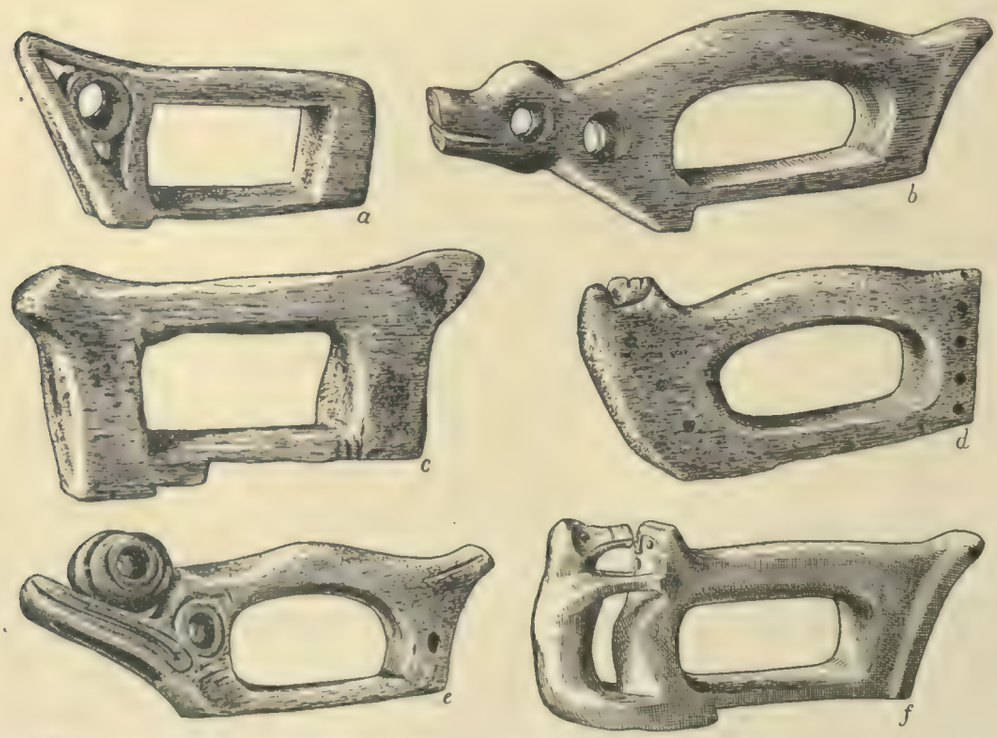


Fig. 49, *a–f*. Adze-Handles made of Bone of Whale. Nootka. (Royal Ethnographical Museum, Berlin, Nos. IV A 2021, 1212, 2019, orig. 717, 2022, 2018.)

red cedar (Fig. 50). The thickest drill-point that I have seen is nearly 1 cm. in diameter, while finer points are less than 5 mm. thick.

Wedges. — Wedges (LE'mg·ayu, Fig. 51) are made of yew-wood. One man

Fig. 50 ($\frac{16}{8851}$). Drill. Length 35 cm.

bends a small yew-tree to the ground, and another one cuts it through at the bend with a gritstone which is kept wet. The tree generally snaps before it is cut half through. Then the branches are removed, and the tree is cut with gritstones into pieces of the desired length. The points of these pieces are next burned off to harden them, and are rubbed down with water on a large slab of sandstone. The burning of the wood prevents it from warping. When the point is ground down, the lower side of the wedge is given a steeper slant than the upper one; so that when driven into a horizontal log, the wedge stands slanting upward. In other cases the wedge is ground down on one side only (Fig. 51, *b*, *c*), and the sides are flattened down by chopping with an adze or by grinding. The tip of the wedge also generally tapers down from the sides. The butt-end is tapered down slightly, and is then provided with a ring made of cedar-withes. After the ring has been fastened on to the wedge, the butt-end is sometimes rubbed against a wetted gritstone until it is quite flat. Generally, however, it is battered down on a stone slab. Wedges for splitting boards are always made in sets of seven pieces, the longest of which is four spans long, while the others decrease in length to about two spans and a half or less. Other wedges are made for hollowing out canoes. These are made of crooked pieces of yew-wood, which are bent so as to conform to the inner curvature of the canoe. They are ground down to a point on the concave side.

Fig. 51, *a* ($\frac{16}{12\,8\,0}$ a), *b* ($\frac{16}{12\,0\,0}$ b), *c* ($\frac{16}{12\,0\,0}$ f). Wedges. Length, 24 cm., 57 cm., 47 cm.

Besides these large wedges, quite small ones are used for work in the house, particularly for splitting fire-wood (Fig. 51, *a*). These are only about 20 cm. long, and are generally ground down evenly from both sides, the point of the wedge being rounded.

Quite different from these, in its use, is the small marking-wedge (maē'ł-banō), which is sometimes made of cedar-wood (Fig. 52). It is used for marking the line along which the large wedges are driven in. The butt-end of the wedge is made in the same way as those previously described; while the point is ground down or whittled down from two sides, and has a straight edge.

Fig. 52 ($\frac{18}{50\,7\,8}$). Marking-Wedge. Length, 25 cm.

The making of canoe wedges was described to me as follows:

Now the canoe-builder leaves his (canoe-)building for a short time to go and search for a yew-tree in the woods. As soon as he has found a good one, he chops it at a bent that is moderately thick. One of them is long. Its length is three spans and four finger-widths; and its thickness is three finger-widths [through]. And he goes and chops the next one. It is just three spans long, that second one, and it has the same thickness as the first one. And he chops one more, the third one, which is two spans and four finger-widths. The fourth one is just two spans. And the fifth one is one span and four finger-widths long. The sixth one is one span long, and the seventh has the same length as the sixth.

Then he has already taken his adze and adzes the points so that they are flat (and concave on one side, convex on the other). Then he adzes the butt-end also, so that the butt-end is sharp and pointed.

As soon as this is done, he pulls down long ceder-withes; and as soon as he has enough, he twists them so that they are like sewing-withes for canoe-sewing. And then he makes them into crowns (for the wedges).

As soon as he has made enough

Wä, laem yā'wasīdēda lē'q!ēnoxwē bâ'sēs lē'qase'wē, qa's lē ā'lä l!e'mq!a lā'xa ā'l!ē. Wä, g·î'l'mēsē q!ā'xa ë'k·axs la'ē sō'p!ēd lā'xa wā'wak·ała ha'yā'ł'a-g·ita. Wä, laem g·î'lt!ēda 'ne'mts!aqē. Wä, la'e'm yū'duẋ'up!enk·ēsa mō'denē lā'xens q!wā'q!wax·ts!āna'ēx, yîx wā's-gemasas. Wä, la yū'duẋ'udenx·sâwē wā'g·ītasas 'ne'mē. Wä, lē ē't!ēd sō'-p!ēdxa ma'k·îläq. Wä, la 'ne'x'neqe'la yū'duẋ'up!enk·, yîx (2) wā'sgemasas lā'-xens q!wā'q!wax·ts!āna'ēx. Wä, lā''xaē hë'em wā'g·itē (1). Wä, lē ē't!ēd sō'-p!īdxa 'ne'mts!aqē, yîx (3), ma'ł'p!e'nk·. Wä, hë''misa mō'denē lā'xens q!wā'-q!wax·ts!āna'ēx. Wä, hë''misa (4) 'ne'x-'neqela ma'ł'p!enk·a. Wä, hë''misa (5) 'ne'mp!enk·, wä, hë''misa mō'denē lā'-xens q!wā'q!wax·ts!āna'ēx. Wä, hë''mis (6) 'ne'mp!enk·a. Wä, hë'em'xaā'wisē wā'sgemē (7).

Wä, gwā'łela'mēsē ax'ē'dxēs k·!e'm-ẓayuwē qa's k·!e'mk·!emłbēq qa pē'-pexbē's. Wä, lā''xaē k·!e'mletōdeq qa we'lxetâyaatsa we'lxetowīlē.

Wä, g·î'l'mēsē gwā'łexs la'ē hë'x·-'īdaem lā łeta'xelax·'īdxa g·î'lsg·îlt!a dewē'xa. Wä, g·î'l'mēsē hē'ł'ōlexs la'e hë'x·'īdaem se'lp!ēdeq qa yuwē's gwē'sa t!e'myâxwa ẋwā'k!unäxs t!emā'sewa'ē. Wä, hë'x·'ida'mēsē we'lxetowēg·īlaq.

Wä, g·î'l'mēsē hē'łalē axā''yas lāx

crowns for his wedges, he puts the crown on the longest one. He takes a flat stone and puts it down on his left hand side, and also [a puddle of] water. He puts the crown on the butt-end of the wedge. He puts (the crown) into water. Then he holds the wedge in the middle, the bottom (point) up, and he begins to strike the crown-end against the stone, so that the butt-end becomes blunt. He continues to put that end into the water and he only stops when the crown is firmly on. When he has finished this, he does the same to the others.

As soon as they are done, he ties them together at the ends with long twisted cedar-withes.[1] Then he carries them on his back and goes home. He hangs them right over the fire so that they dry quickly. Sometimes they hang over the fire for twelve days.

As soon as they are dry he takes them down, puts them down close to the fire and takes his carving-knife. He takes up the longest wedge and puts the flat end into the fire. As soon as it is hot, he takes his carving-knife and shaves the end until it is sharp. When he has finished he puts it back into the fire. As soon as it is hot, he takes tallow and rubs it on the end to make it really brittle. He does so to all the others.

wE'lxEtâ^{s}yasa lē'lEmg·ayuwaxs la'ē wElxEtō'ts lā'xa g·î'lt!Ega^{s}yas. Wä, laEm ax^{s}ē'dxa pExsE'mē t!ē'sEma qa pā'q!esēs lāx gE'mxag·a'walasas. Wä, hë'^{s}misa ^{s}wā'pē, yîxa q!ō'sē. Wä, lē q!ōx^{s}wutō'tsa wExEtâ'^{s}ē lāx ō'xtâ^{s}yasa lE'mg·ayuwē. Wä, lē axstE'nts lāxa ^{s}wā'pē, wä, dâ'yîwēxa lE'mg·ayâxs ë'k·!axsdāłaē. Wä, hë'^{s}mis la L!E'mkulalatsēsa wE'lxEtâ^{s}yaasē lā'xa t!ē'sEmē qa tsēdzEtōx^{s}widēs. Wä, ẋwā'ẋwēlā'qEla^{s}misē L!Enxstendnaẋwas lā'xa ^{s}wā'pē. Wä, ā'łē^{s}mēs gwā'łExs la'ē â'lak·!āla la łek!ut!ālElēda wElxEtâ'^{s}ē. Wä, la gwā'łExs la'ē ē'tlēd hë gwē'x·^{s}īdxa waō'kwē.

Wä, g·î'l^{s}mēsē ^{s}wī'la gwā'ła, la'ē yaē'bEndālasa g·î'lt!a sE'lbEk^{u} dEwē'x lāq.[1] Wä, lē ō'xLālaqēxs la'ē nä'^{s}nakwa. Wä, lē tē'ẋ^{u}stōts lāx ^{s}nEqōstâ'wasēs lEgwī'łē qa hā'labalēs lE'mẋ^{s}wīda. Wä, la ^{s}nā'l^{s}nEmp!Ena g·ä'g·iwalē ^{s}nā'läs tō'ẋ^{u}stE^{s}wēxa lEgwī'łē.

Wä, g·î'l^{s}mēsē la lE'mwumx·^{s}īdExs la'ē axā'xōdEq qa^{s}s ax^{s}ā'lîłēs lā'xa ma'g·înwalīsasēs lEgwī'łaxs la'ē ax^{s}ē'dxēs xE'lẋwāła. Wä, dā'x·^{s}īdxa g·î'lt!Ega^{s}ē LE'mg·ayâ qa^{s}s L!E'nxLendēs pE'xba^{s}ē ō'bē^{s}s lā'xa lEgwī'łē. Wä, g·î'l^{s}mēsē ts!Elx^{s}wī'dExs la'ē dā'x·^{s}īdxa xE'lẋwāła qa^{s}s k·!ā'ẋ^{s}wīdēx ō'ba^{s}yas qa ëë'x·lax·^{s}īdēs. Wä, g·î'l^{s}mēsē gwā'łExs la'ē ẋwē'laqa L!E'nxLents lā'xa lEgwī'łē. Wä, g·î'l^{s}mēsē ts!E'lx^{s}wīdExs la'ē dax·^{s}ī'dxa xE'lẋwāła qa^{s}s k·ā'ẋ^{s}wīdēx ō'ba^{s}yas qa ëë'x·lax·^{s}īdēs. Wä, g·î'l^{s}mēsē gwā'łExs la'ē ẋwē'laqa L!E'nxLents lā'xa lEgwī'łē. Wä, g·î'l^{s}mēsē ts!E'lx^{s}wīdExs la'ē ax^{s}ē'dxa yā'sEkwē qa^{s}s dzEx·bE'ndēs lāq, qa â'läs L!E'mẋwa. Wä, lē^{s}nā'ẋwaEm hë gwēx·^{s}īdxa wao'kwē.

[1] So that they hang parallel, about three finger-widths apart, the middle part of the withe forming a carrying strap which is placed over the forehead.

Carving-Knives. — For wood-carving the characteristic crooked-knife (xɛ́'l-ẋwała) of the North Pacific coast is used (Fig. 53).[1] In one of the specimens here illustrated (*a*) the steel blade is placed against one side of the slightly curved handle, which is cut off flat. On the outer side of the blade a thin strip of cedar-wood is applied, which is held in place by the wrapping. The ends of the wrapping are tucked under and drawn tight. The sheath of the knife is made apparently of the foot of a fawn, which is tied up near its end. The sheath of a second knife, the blade and handle of which are much more strongly curved than the specimen here illustrated ($\frac{16}{8201}$), is made in the same way. The sheath of the knife represented in Fig. 53, *b*, is made of two pieces of wood which are lashed together. I do not know what implement

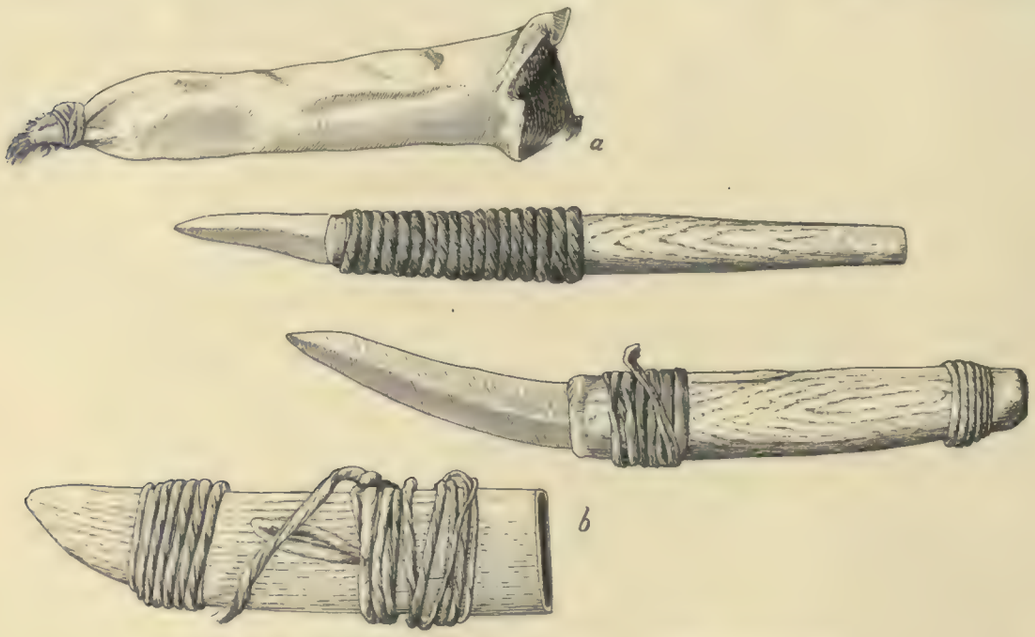


Fig. 53, *a* ($\frac{16}{5202}$), *b* ($\frac{16}{7057}$). Carving-Knives. Length, 24 cm., 29 cm.

was used in place of the crooked-knife before the introduction of iron and steel. The Indians have no information to offer on this point, and no evidence has been obtained from archæological finds. In the interior of the country, beaver-teeth and chipped stone knives were used for this purpose.[2] The straight-edged knife (nɛxx·ä́'ła k·ɬā́'wayu) is also used in woodwork, but it is presumably of modern origin.

Special Adzes. — Some rough preparatory work on wood was done by means of fire; for instance, the insides of canoes and of large kettles were burned out. To remove the charcoal from the surface of the canoe, a small

[1] See Otis T. Mason, The Man's Knife among the North American Indians (Report of the U. S. National Museum for 1897, pp. 725 et seq.).

[2] See Teit, The Thompson Indians of British Columbia, Vol. I of this series, p. 183.

adze with bent handle (tsâ′yu) was used. The tip of this adze was often made of elk-antler, while the handle was made of the penis-bone of a sea-otter. Adzes with handles made of a slice of the trunk of a tree with an attached branch, the slice of the trunk serving as a haft for the blade, are also in use (qɛ′ndzayu). Paddles and spoons are roughed out with adze and knife, but their final form is given to them with the gritstone.

Polishing Materials. — For polishing wood, gritstone is used, with which all the adze-marks are removed. The final polish is given by rubbing the wood with the dried tail of the dogfish. Sometimes a high polish is added by oiling the surface and by rubbing it with the thick of the thumb. This is done, for instance, with halibut-hooks. The bottom of the canoe, after it has been burned over, is greased with dog fish-oil.

Tallow for greasing wood that is to be made brittle and that is to have a high polish is made into cakes. The tripe-fat is chewed and put into a kettle in which it is boiled with a little water for an hour or two. Then it is poured with a ladle into a food-tray such as are used for a single person. The bottom of the tray is filled with water, the fat is poured on and allowed to cool off until it hardens. Then the tray is heated by the fire, turned over and the cake of tallow drops out. When the tallow is used, the cake is cut lengthwise into bars one or two fingers wide. The cuts pass about half way through and each bar is broken off as it is needed. The wood that is to be greased is heated and rubbed with the end of the bar.

Wood-Work. *The Red Cedar.* — The principal kind of wood used for making large planks for house-building, for building canoes, and for making boxes, is the red cedar. When cedar-trees are to be selected which are to be used for canoes or for rafters, or for posts of the house, a moss-covered trunk is selected, because this generally contains the best wood. The workman first tests the wood to see if it is sound by making a small hole in it with a long-handled chisel. This is called "feeling into the tree" (p!ē′wīL). For making boards for boxes, fallen trees are preferred, because it is said that the wood is softer and more easily split. Coarse-grained cedars are best for roof-beams because they do not easily catch fire. Fine-grained cedar catches fire very easily, and sparks burn holes in the wood. This kind of wood makes good canoes because it does not split easily.

Felling Trees. — In olden times cedar-trees were not felled, but driftwood was used. This was made into pieces of the desired length by means of fire. A fire was built on the log at the place where it was to be cut. Stones were put into this fire, which burned the wood below. The adjoining parts of the log were kept wet, so that the fire did not spread sideways.

At present cedars are cut in the following manner. The place on which the three is to fall is prepared by felling small trees, which are laid on the ground so that the cedar will lie across them. Then a deep cut reaching

to the centre of the tree is made with axes on the side toward which it is to fall. Another, smaller cut is made on the opposite side, from 8 cm. to 10 cm. higher than the first cut. As soon as this cut is deep enough, the tree begins to fall. The cuts are always so placed that the weather side of the tree, which has no branches (the "belly" of the tree), is on top. As soon as the tree is down, the limbs and branches are cut off; then a piece of the trunk, of the desired length, is cut out, and the bark and sap are removed. After the log has been trimmed, it is rolled over from the small trees on which it lies to two other trees that are placed not far apart in the same direction in which the cedar-log lies. Then rollers are put under the cedar, and it is rolled down into the water.

Making Planks. — In olden times planks were cut off from standing trees. In the butt-end of the tree, on the side that has no branches, a hole was cut, in which a fire was started, and carefully guarded, that it should not spread upward. The charcoal was scraped out of the hole with a stick of hemlock-wood, and the wood above the hole was kept wet by means of a long stick wrapped with hemlock-branches. After this hole had been made at the butt-end, the workman would climb the tree to a height of about three or four fathoms. There he would work, standing on the branches of a small tree that had been pulled over so that it leaned against the trunk of the large tree on which he was working. Two places about one cubit apart were cut out of the trunk of the tree with stone axes, and the intervening wood was wedged out. In this manner a deep cut was made. It is said that sometimes this upper cut was also burnt out; but this was probably not done very often, because the fire makes the wood brittle. Then planks were split off with wedges between these two deep cuts.

At present the trees out of which boards are to be made are felled so that they lie with the smooth weather side upward. A straight line is marked with the marking-wedge across the tree, four finger-widths above the centre. At present, chisels are used for this purpose. Then the set of seven splitting-wedges are driven in along this line, the largest farthest away from the workman,

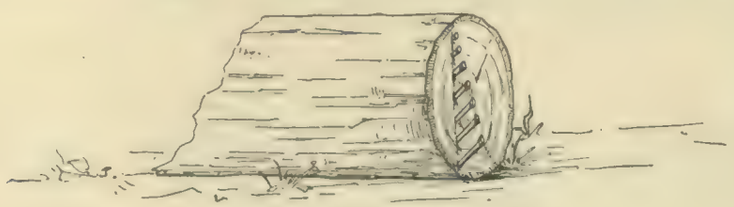


Fig. 54. Splitting Red Cedar.

and all slanting away from him (Fig. 54). They are driven in with the hand hammer, the wedges always being struck in succession.

Judging from a common incident of the test myths, in which it is told

that a man throws his hand-hammer into a split tree and then knocks the spreading-stick (qEdExsta'ᵋya) out to let it close,[1] it appears that for spreading the tree a stout stick was used the ends of which rested against the sides of the crack.

When the tree begins to open, a round spreading-stick (dExa'yō) about six inches thick, made of crab-apple or yew wood, is inserted crosswise in the crack, and is driven in by means of a wedge with blunt end, which is hollowed out so as to hold around the horizontal spreading-stick. By driving the spreading-stick in, the tree is split along a plane parallel to the stick and to the axis of the tree. As the work progresses, the stick is driven forward from both sides of the tree by two men, each using one blunt wedge.

Often the smooth side of the tree is put on one side, and the tree is split in a vertical plane. In that case the spreading-stick is put in as soon as the tree is wide enough open. Then the wedges are driven in again in the narrow crack in front of the spreading-stick; and when the tree opens still more, the spreading-stick is taken out again and inserted in front of the wedges.

Trees are always split from the upper end down to the lower end, otherwise the plane of fissure will turn outward, so that the planks will be short and thin at one end.

After the top of the log has been split off, it is thrown down and laid flat side upward, the upper end resting on a log. Then the thickness of the first plank to be split off is marked on the end of the log. It is made three finger-widths thick. The plane of this plank never runs quite parallel to the first plane of splitting, because the stresses in the wood, owing to the change in its position, have changed. The planes separating the following planks, however, run nearly parallel with the surface of the first plank. Therefore the thickness of the second plank is marked only two finger-widths under the last line of division. If in splitting this plank the plane of separation should begin to dip downward, the upper surface of the log is loaded with logs and stones. Then the plane of separation rises again. If, on the other hand, it turns upward, the tree is turned over, and the weight of the wood changes the inner stresses so as to cause the plane to dip down again. The longest planks that are thus cut are three fathoms and a half long. When planks are split from a horizontal log, the split face of which lies upward, the outer margins of the planks always turn downward, so that the upper side of the plank is convex near its sides, while the lower side is concave.

After the planks have been roughed out, they are tied together in a raft and towed home. Generally, in making the raft, several planks are placed one on top of another. Three piles of planks are placed side by side. The

[1] Vol. III, pp. 99, 366; Vol. X, p. 203.

ends of the planks are held between two hemlock-trees, which are tied firmly together with cedar-withes.

The planks are often somewhat twisted. In order to straighten them, they are either placed in a pile on a level spot and weighted with heavy stones, or two pairs of stakes are driven into the ground, — one pair at each end of the plank, and slanting in opposite directions. Then the plank is forced in between these pairs of stakes, and is thus given a twist in the direction opposite to the one it first had. It is kept in this position for some time. When it is released, it remains flat.

Next the plank is planed. With one light stroke the chisel is driven into the surface. Then the chisel is laid down flat, and a long splint is separated from the plank by shoving the tool down along its surface. After a distance of about 8 cm. the chisel is raised again, and driven in with a light stroke, and the same process of shaving off is continued. Thus long straight splints are removed from the rough surface of the plank, and it becomes somewhat smoother.

The final planing is done with the hand-adze. The wood is always adzed with the grain. Splints are cut off either by moving the adze down in a line parallel to the edge of the plank and as long as the arm will permit, or in a line sideways across the plank. The former method results in an arrangement of the adze-marks which gives the plank a fluted appearance, the other gives the impression of a series of cross-lines. Sometimes the adze-lines are so arranged as to form triangles, diamonds, or other designs.

Splitting Wood. — In all wood-work particular care is taken to split the wood in such a way that it is most serviceable for the purpose for which it is intended. Two methods of splitting wood are distinguished, — the one in which the surface of the plank that is cut out runs radially from the outside through the centre of the tree, crossing the rings at right angles; the other in which the split surface is nearly tangential, so that the rings intersect the face of the board at a very small angle. The first of these methods of cutting is called LE'n^{s}ya. The second is called xau'tslîxs. Boards are, on the whole, cut tangentially. Boards used for the making of boxes are split radially (that is to say, they are taken from the centre of the tree), while those used for the bottom and for the top are split tangentially (that is to say, they are taken from near the outside of the tree). Very large boards are, of course, always taken from near the middle of the tree, and are therefore cut radially.

In making root-diggers, the branches from which they are made are halved, and the point is placed near the outer side of the branch. Other small implements are made of quartered branches. This is done whenever it is desired to have the harder part of the wood at that portion of the implement which is subjected to the greatest wear. The shanks of spindles and netting-needes, for instance, are made in this manner.

Bending Wood. — It has been stated before that in the straightening-out of cedar-planks the wood is bent and given a certain form. This process is an important feature of all the wood-work of the Kwakiutl Indians. Thus, in the making of boxes, bending plays an important rôle. The sides of boxes are made of a single board, which is bent over to form the corners. These are made in in the following manner. A cut (Fig. 55) is made in the wood at right angles to the surface of the plank. Then the wood is shaved off from the right-hand side so that the surface slants down to the deep cut (xu'tEq). After these have been made, a shallow groove is made on the opposite side of the plank. After these grooves have been made, the board is placed in hot water or steam and put between two level planks which are weighted with stones. Thus it is left over night. When it is taken out on the following morning, the plank is perfectly level. When the wood is to be bent at the kerf, a little ditch as wide as the board is dug in the ground. Stones are heated and put into the ditch. Then fresh kelp is placed on the hot stones and is sprinkled with water. Then the board is placed across the kelp with the shallow groove downward. Sometimes the deeper kerf is covered with moss or soft cedar-bark, upon which hot water is dripped. Then that side of the plank which is to be bent up is grasped with a pair of tongs, while the other side is held down by a stick placed near the kerf. One man steps on this stick, while the other one, who holds the board in the tongs, bends it over slowly, so that the shallow groove forms the outer, convex side of the angle. The pressure on the stationary part of the board prevents the breaking of the outer fibres of the wood.

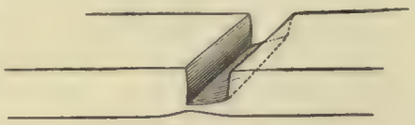


Fig. 55. Diagram illustrating Method of Kerfing and Bending.

Wood-bending is also used in the making of canoes, as will be described later on.

Bending is also used for shaping the bow, which is made of the root of the yellow cedar. A straight piece of root is cut out, the end of which is heated by the fire. Then it is rubbed with mountain-goat or deer tallow, which is first held in the mouth. The tallow melts on the hot stick, which is thoroughly soaked with it. Then the end of the cedar-root is put into the crack of a drift-log, and the weight of the root is allowed to bend over the end. Thus it is kept until it cools off, when it is taken off. Before the bent piece of root is entirely cold, two lines are burned with a red-hot stone into the convex side of the bow just above and below the point of strongest curvature. This prevents the bend from straightening out again. The opposite end is treated in the same way.

Following is a description of the bending of fish-hooks (see Fig. 149).

When the fisherman gets ready, when he first goes to fish red cod, he takes a branch of driftwood of fir[1] and splits it into four pieces. The length of each is one span of our fingers and four finger-widths. Then he shaves them so that they are thin and round. As soon as he has finished, he takes kelp and puts into it the split branches which are to be the four [branch] hooks for cod. He has also four pieces of kelp. When night comes, he digs a hole in the ashes of his fire and puts into it the four pieces of kelp in which the [branch] hooks for red cod are. Then he covers them over and leaves them the whole length of the night until the morning. As soon as he finishes covering them over, he takes a short board and carves out a rounded mould the same thickness as the thickness of the [branch] hook for the red cod, and the carved mould has the same depth as the size of the hook that it to be made.[2] After he has finished four of them, he puts them away.

Now he is ready, when day comes the next morning. In the morning, as soon as day comes, he digs up what has been covered over, and he rips open the pieces of kelp while they are still warm, and he takes the round branches and bends them into the carved moulds in the short board, and he pushes them into it. He does so with all four of them. As soon as he has finished, he puts them away in a

Yōxs g·ā́laē xwā́naɬÉlēda lṓqwaLaq; wä, hë́ˢmaaxs g·ā́laē lḗda nā́nētslaēnoxwē, wä, la axˢḗdxa qulÉmē L!Enák·sa mṓmuχᵘdē. Wä, laˢmḗs xṓxōx·sEndEq qa mṓχᵘsē. Wä, la ˢnÉmp!Enk·ē wā́sgEmasas lā́xEns bā́La yîsÉns q!wā́q!wax·ts!ānaˢēx; wä, hë́ˢmisa mā́ɬdEnē. Wä, la k·!ā́χˢwīdEq qa wuswúɬbēs lā́xēs laḗnaē lḗElx·îna. Wä, g·î́lˢmēsē gwā́ɬExs láē axˢḗdxa wā́wadē. Wä, la wuyṓq!uqasa k·!ṓkwē t!Enx· lāq. Wä, mṓts!aqēda nā́nētslaayōLē t!ētlÉnx·sEm ġ·ā́g·imōla. Wä, lā́ˢxaa mṓts!aqa wā́wadä. Wä, g·î́lˢmēsē ġā́nuɬˢīda, láē ˢlap!ā́lisa lā́xa gunā́ˢyasēs lEgwī́ɬē. Wä, la LṒxts!ōdālasa mṓts!aqē wā́wadē, yîx la aˢxqÉlaxa t!ētlÉnx·sEmē nā́nēts!aayōLē g·ā́g·imōla. Wä, la dzEmḗg·îndEq. Wä, la hë́x·säEm lāx wā́sgEmasasa gā́nuLē, lā́laa lā́xa ġaā́la. Wä, g·î́lˢmēsē ġwāɬ dzEmḗg·îndqēxs láē axˢḗdxa ts!Ek!wá saṓkwa qaˢs k·!ḗyōɬts!ōdēxa la wak·ā́ɬa, hë́Em wā́dzEqē wā́g·ēdasasa t!Énx·sEmē nā́nēts!aayōLē g·ā́g·imōla. Wä, la hë́Em wā́labElalē k·!ḗyōɬtswakwa wā́g·ēdasasa g·ā́g·imōlaLē. Wä, g·î́lˢmēsē gwā́ɬa mṓwaxs láē g·ḗxaq.

Wä, laÉm ġwā́ɬāɬa qō ˢnā́x·ˢīdLōxa gaā́la. Wä, g·î́lˢmēsē ˢnā́x·ˢīdxa ġaā́läxs láē lā́p!Eqâlēsxēs dzamḗsaseˢwas láē qwā́gEɬEndxa wā́wadäxs hë́ˢmaē ā́ɬēs ts!Élqwē. Wä, la axˢḗdxa lḗx·Enē t!Énx·a qaˢs wáx·ts!ōdēs lā́xa k·!eṓɬts!Ewakwē lā́xa ts!Eq!wádzowē saṓkwa. Wä, la LōxbEtÉndEq. Wä, la ˢnā́χwaEm hë g·wḗx·ˢītsa mṓwē. Wä, g·î́lˢmēsē gwā́ɬExs láē axˢā́liɬas lā́xa wudaḗɬē. Wä, g·î́lˢmēsē wudEx·

[1] Or a knot of this wood.

[2] Sometimes the mould is laid out on a board with stout pegs.

cool place in the house; and when they get cold, he takes his hooks and takes them out; and he takes tallow (of the deer) and chews it; and when it is soft, he heats the hooks by the fire; and he only stops heating them when they are scorched. Then he rubs them with the tallow, and he puts them back again into the place where they had been, into the carved moulds in the short board. The reason why he puts on tallow is that they become stiff and that they do not open again. The next day, when they are cold, he takes them out again from the carved moulds in the short board. Now the hooks are brittle.

Then he takes the hollow-sided bone of the foreleg of the elk and breaks it in pieces, and he sharpens thin pieces. They become round, and one end is sharp. They are to be the bone barbs of the hooks. As soon as he has finished, he ties them on to the hooks. He has as his means of tying them split spruce-roots.

When he has finished, he takes seaweed from the beach, and spruce, and puts them into a small kettle. Then he pours salt water over them and puts it over the fire of the house. They boil for a long time, and then he takes them off. When the water gets cold, he takes his four branch hooks and puts them into the kettle. They stay in the kettle for four days. Then he takes them out and hangs them up in the corner of the house.

ˢī′dᴇxs la′ē axˢē′dxēs g·ā′mōlaʟē qaˢs axwułts!ō′dēq. Wä, la axˢē′dxa yā′sᴇkwē qaˢs malē′ẋˢwīdēq. Wä, g·î′lˢmēsē la tᴇ′lxˢwīdᴇxs la′ē pᴇxˑˢī′dxa g·ā′mōla lā′xa lᴇgwī′łē. Wä, ā′łˢmēsē gwāł pᴇx·a′qēxs la′ē la k·!ō′mla. Wä, la dzᴇxˑˢī′tsa yā′sᴇkwē lāx ō′sgᴇmaˢyas. Wä, lā′xaē ẋwē′laqa wā′x·ts!ōts lā′xēs axts!ᴇwa′sdēda k·!eō′łts!ᴇwakwē lā′xa ts!ᴇẋᵘsᴇmē′ saō′kwa. Wä, hë′ᴇm lā′g·iłas axsᴇ′mtsa yā′sᴇkwē lāq qa ʟ!ᴇ′mxēs, hë′ˢmē qa k·!ē′sēs ē′t!ēd dzaẋˢwī′da. Wä, g·î′lˢmēsē wudᴇxˑˢī′dxa la ē′t!ēd ˢnā′xˑˢīdᴇxs la′ē axˢē′dᴇq qaˢs axwułts!ō′dēq lā′xa k·!eō′łts!ᴇwakwē ts!ᴇk!wadzō′ saō′kwa. Wä, laᴇ′m la ʟ!ᴇ′mxwa lē′da g·ā′mōla.

Wä, la axˢē′dxa xu′lg·inōsē, yîx xā′qas g·ā′lᴇmałg·iwaˢyas g·ō′guˢyâsa ʟ!ᴇwᴇ′lsē. Wä, la lᴇlē′xsᴇndᴇq. Wä, hë′ˢmis la g·ē′xˢīdzōsēda ˢwī′sˢwułē. Wä, la łē′ᴇlxˑᴇnxˑˢīda. Wä, la pᴇxbē′da apsbā′ˢyas. Wä, la lē′xˑᴇm ë′xˑbēda apsbā′ˢyas. Wä, laᴇ′m xā′xxˑä′ʟᴇs g·ā′molās. Wä, g·î′lˢmēsē gwā′łᴇxs la′ē yîłˢaʟᴇ′lōts lā′xa g·ā′mōla. Wä, laᴇ′m yiḷᴇ′mnōẋᵘsa pa′akwē′ ʟ!ō′p!ekˑasa alē′wasē.

Wä, g·î′lˢmēsē gwā′ła la′ē axˢē′dxa ʟ!ᴇsʟ!ᴇkwē′ lā′xa ʟ!ᴇma′isē ḷᴇˢwa alē′wasē qaˢs axts!ō′dēs lā′xa haˢnᴇ′mē. Wä, la guxts!ō′tsa dᴇ′msxˑē lāq. Wä, la ha′nxˑʟᴇnts lā′xa lᴇgwī′łtsēs g·ō′kwē. Wä, la gē′g·ilīłˢᴇm maᴇ′mdᴇlqulaxs la′ē ha′nxˑsᴇndᴇq. Wä, g·î′lˢmēsē wuda′ˢstaxˑˢīdᴇxs la′ē axˢē′dxēs mō′sgᴇmē t!ē′ᴇnxˑsᴇm g·ᴇg·imō′la qaˢs axˢstᴇ′ndēs lā′xa ha′nxˑʟanowē. Wä, la mō′p!ᴇnẋwaˢsē ˢnā′läs gē′ˢstalīł lā′xa ha′nxˑʟanowē. Wä, la axwuˢstᴇ′ndᴇq qaˢs tēxˑˢwā′līłēs lā′xa ō′nōgwīłasēs g·ō′kwē.

Small bent hooks are made in the same way as halibut hooks, of the

underside of a branch of an old, rotten fir tree (mō′muχ^{u}dē). The length of the stick that is to be made into a small hook is a short span (thumb to first finger). After one lenght has been cut off, the others are cut accordingly. These halved branches are cut into a number of square pieces which are then whittled down with the crooked knife. One end is made a little thinner than the other and the barb end is flattened on one side. All the sticks are made as nearly as possible in the same length and then they are tied up in bundles of ten each. These bundles are soaked in fresh water in a small box. The patterns for bending the hooks are laid out on a smooth board. First a pattern is cut out of a thin cedar board and from seven to nine holes are drilled into the large board around this pattern. Pegs made of pine wood are driven into these holes. As many patterns as are necessary are thus drilled into the board.

The sticks for bending are not heated in kelpstems, but placed in an oven which is dug in a corner of the house. The bottom of the oven is filled with red-hot stones which are covered with from 15–20 cm. of dulce. The sticks are placed on it and are covered with from 15–20 cm. of fern leaves, over which old mats are spread. Then water is poured on. In about fifteen minutes they are taken out and bent inside the peg moulds. Then they are heated again and greased.

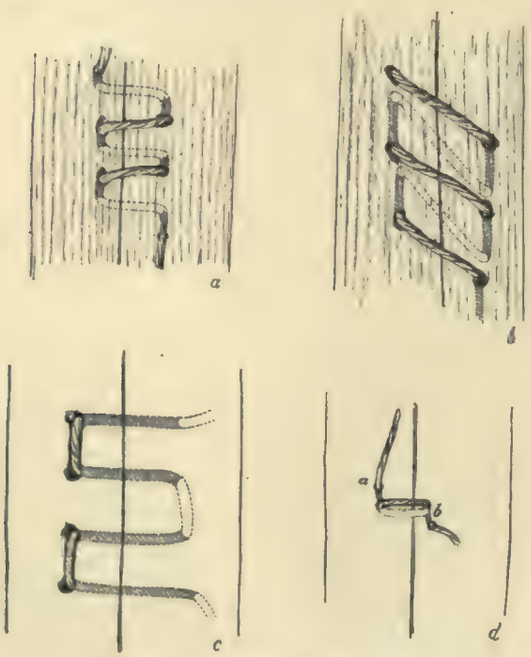


Fig. 56. Methods of Sewing Wood.

Sewing Wood. — The principal method used for joining two pieces of wood is that of sewing. Holes are drilled in the pieces that are to be joined together, and they are firmly connected by means of strong fibre. The only material that is used for this purpose is twisted cedar-twigs. In the illustrations the drill-holes passing through the wood are indicated by shading, while the cedar-twigs lying on the opposite side of the wood are indicated by broken lines. It will be seen that almost everywhere the drill-holes are carried through the wood diagonally, and that in this way a number of alternate stitches on the upper and lower side appear on the surface of the boards that are joined together.

The simplest stitches for sewing are used in closing up cracks in boards and canoes (Fig. 56). The cedar-withes are always placed in grooves which are cut on the surface of the board, connecting the drill-holes; so that after

sewing, the surface of the board presents a smooth surface, and the stitches are protected against injury by friction or cutting. The simplest method of stitching is shown in Fig. 56, *a* and *b*. In both of these cases the cedar-withes cross on the surface of the board over the crack that is to be closed. Another principle is used in the sewing illustrated in Fig. 56, *c*. Here the diagonal drilling crosses through the crack, and the stitches are visible on the board lying in a direction parallel to the crack. Still another principle is used in Fig. 56, *d*, which is employed particularly in sewing up small cracks in canoes, and which is sometimes applied in single stitches. As will be seen in the illustration, the sewing begins with a diagonal stitch carried through the wood a little distance away from the crack. Then a groove (xudē'g·ē) is made on both the upper and the lower side of the board to be sewed. The withe is pulled through these grooves one turn and a half, and then it emerges on the other side through a diagonal hole (*b*) corresponding to the first diagonal hole (*a*).

When large cracks are to be closed, where a considerable amount of pressure is needed to bring the sides of the board together before they are finally sewed up, a method is used which is illustrated in Fig. 57. Two pairs of holes are drilled straight through the wood on each side of the crack, and a stout withe is pulled through, as indicated in the illustration. After it has been closed, a wedge of cedar-wood the lower side of which is levelled off so as to conform with the surface of the board is driven in, and in this manner the sides of the crack are drawn together. This is essentially a temporary expedient. After the cracks have been brought together in this way, they are sewed up in accordance with the methods previously described.

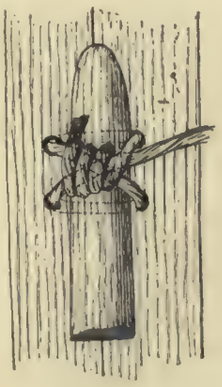


Fig. 57. Method of closing Large Cracks in Wood.

In all work of this kind the workman proceeds as follows. The fine tip of the cedar-withe is pushed through the hole, and is pulled through until the thick end becomes wedged into the drill-hole; then the withe is twisted again, and the tip is pushed through the next hole and is pulled tight, so that the withe lies in the groove on the surface of the board. A small wedge with blunt end (dē'diqwēg·anō) — often with a groove in the blunt end of the same curvature as the cross-section of the withe — is used to drive home the cedar-withe with light strokes into the groove until it lies perfectly smooth and flat. In order to prevent any slipping-back of the cedar-withe, small splints of cedar-wood are driven into the drill-holes with small hard pebbles until the withe is wedged in securely. In this way the workman continues until the whole sewing is completed, the tip of the withe being wedged in with particular care. The last stitch made with the thin end is generally pulled twice through the same drill-hole before being

wedged in, and the last two stitches are placed close together; so that the withes must be bent over at sharp angles, which gives them a securer hold. Then the butt-end and the tip are both cut off close to the surface of the board. The withes, while they are being used for sewing, are kept wet.

Sewing in also applied for joining together boards that meet at an angle; for instance, thwarts are attached to the canoe by sewing. The common method applied by the Guasila is illustrated in Fig. 58, *a*. It will be seen that in the specimen here figured the butt-end of the withe is knotted instead of being wedged in. On the whole, however, wedging seems to be used more commonly than knotting. In this specimen the stitches on the face of the thwart and on the outside of the canoe run in the transversal plane of the canoe. The specimen is so drawn that the outer side of the canoe is represented by the lower surface of the larger board. The tip of the withe is wedged into the thwart, and is cut off close to it when the work is finished. The common method of attaching the thwart which is used by the Kwakiutl is illustrated in Fig. 58, *b*. The main difference in these methods consists in the application of a wedge under the thwart, which is intended to keep the joint tight. This wedge is provided with a number of notches which fit the direction of the withes. Attention may also be called to the rather elaborate fastening of the tip of the withe.

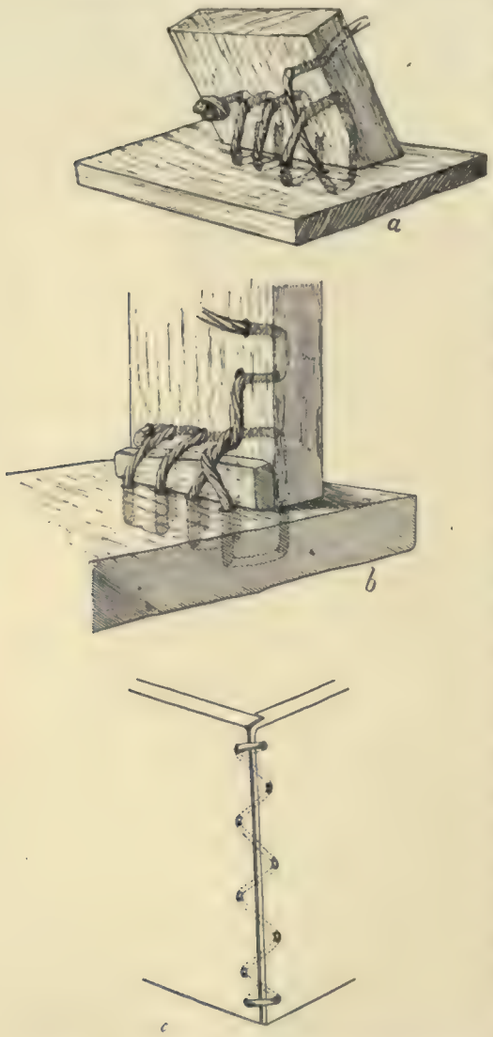


Fig. 58. Sewing of Canoe-Thwarts and Boxes.

Similar methods of sewing are required in sewing together the ends of the board forming the side of a bent box (see p. 331). After the board which is to form the sides of a box has been bent as described before, the ends meet at a right angle (Fig. 58, *c*). When they are to be sewed together, the whole box is tied up with cedar-ropes. Before the drilling of the holes for sewing is begun, three preliminary stitches or pegs are put in, — two at the ends, and one in the middle. The first drill-hole is made near the bottom of the box. It passes diagonally through the

corner. The next drill-hole begins at the place where the first drill-hole emerges on one side, and passes diagonally and slanting upward through the corner to the other side. The following drill-hole begins at the point where the last one emerges, and passes back diagonally upward though the ends of both boards. In this way the drilling is continued, so that the drill-holes all lie in the plane of the diagonal of the box, forming a zigzag line from bottom to top. Each hole is sewed as soon as it has been made, the withes being twisted as soon as they emerge from the drill-hole, and then being wedged in. The arrangement of the drill-holes is such that the sewing is entirely invisible. The holes in which the withes lie are soon filled with fat and soot, and the corner looks perfectly smooth. This sewing is done with fine cedar-withes dyed in urine.

In other cases the diagonal stitches on the corner of the box are carried through horizontally; and a vertical groove placed alternately on the two ends of the box connects the diagonal stitches.

Pegging. — Another method of joining pieces of wood is by pegging. Pegs are made of wood, and are wedged into drill-holes. In every case care is taken that the drill-hole is not in the direction in which the pegged joint would naturally come apart. The corners of modern boxes are almost all pegged, the pegs passing through horizontal diagonal holes. The bottom of the box is also pegged to the sides, the holes passing diagonally from the bottom outward through the sides.

Fitting Boards together. — In some cases it is necessary to fit boards together with great accuracy; for instance, when fitting the sides of a box to its bottom. This is done in the following manner. The piece of wood to which another piece is to be fitted is smeared all along its edge with wet powdered charcoal, which is kept in a clam-shell. Then it is pressed against the other piece, which has been fitted as near as possible in the desired form. Wherever there is an inaccuracy in the fitting, the charcoal produces black spots. These places are shaved off, until in the final fitting the charcoal forms one even continuous black line. When such pieces are to be fitted together so as to be water-tight, they are first rubbed with tallow and rotten pitch-wood.

Caulking. — In cases where the wood shows defects, caulking may become necessary. This is generally done by driving shredded yellow-cedar bark into the crack, sewing it together with cedar-withes, and then covering it with gum. When there is a knot-hole in the side of a canoe, it is filled as tight as possible with rushes, the inner bark of the spruce-tree, or cedar-twigs. Then pegs made of red cedar, about 15 cm. long and pointed at one end, are driven in from both sides until the hole is completely filled. This is an efficient temporary closing of a knot-hole. For a permanent closing, new pieces are sewed into the sides of the canoe.

In caulking canoes, rotten pitch-wood is used, which is gathered in bags. This is rubbed until it becomes quite fine and sticky, and is put over the

yellow-cedar bark which is inserted in cracks; or when the cracks are very narrow, the rotten wood is simply rubbed into them until they are entirely filled up. This renders the canoes perfectly water-tight.

Cedar-Bark Boards. — When planks are not available, cedar-bark is sometimes used as a substitute. The bark is removed from trees of a span or two in diameter. The bark is cut all around the tree near the bottom, and another cut is made a fathom or two higher up. Then the bark is slit open lengthwise down one side of the trunk, and it is either removed with the hands or pried off with levers made of hemlock or bone of whale. The pieces of bark are flattened out and tied firmly at the ends, and, if necessary, also in one or two places near the middle, between pairs of cedar-sticks. The bark is allowed to dry in this position, and is kept flat. Pieces of bark of the same kind are also used for making the sides of boxes. The bark is flattened in the way just described. Then the pairs of sticks which hold it flat are removed. A number of kerfs are cut from the inside, and the piece of bark is bent in the same way as the sides of the box, the only difference being that the ends overlap. Then the overlapping ends are sewed together with thong or withes. The bent side is sewed to a bottom in the same manner as the sides of the wooden box. A specimen of this kind in the collection of the Museum ($\frac{16}{9613}$), is square, and has sides 45 cm. high and 31 cm. wide. Cedar-bark is also used for roofing. Sometimes it is not held firmly between sticks, but allowed to curl up somewhat in order to form gutters for the rain to run off quickly. This kind of bark is also used for making canoes and bailers.[1] In making the bark bailer a piece of cedar-bark about 70 cm. long and 40 cm. wide is cut out. The length of the bottom of the bailer is laid out in the middle, the bottom being about one-half of the total length. Then a square notch is cut in the middle of each short side, which is then bent up. Then the sides are gathered fan-like and attached to the handle. When the sides are gathered, the bottom assumes a curved form.

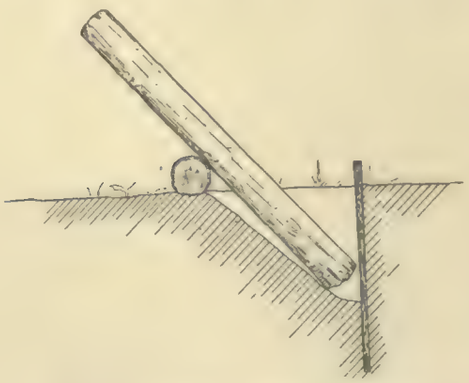


Fig. 59. Method of raising House-Post.

Structural Work. — In many of the structures erected by the Kwakiutl, heavy logs are used, and considerable skill has been developed in handling these heavy burdens.

The framework of the house, for instance, consists of very heavy beams and posts. The posts are up to three fathoms long and from three to four spans in diameter. The method of raising the house-post is illustrated in Fig. 59.

[1] See Chapter VI, Travel and Transportation, Fig. 119, *a*.

A hole is dug at the place where the post is to stand, and it is continued in the form of a ditch towards the centre of the house, where no other posts are to be erected. The front side of the hole where the post is to stand is protected by heavy planks that are driven into the ground. Then the post is shoved into this hole, and is gradually raised from the slanting side of the ditch, being supported by logs of proper size as it is being raised.

Much more complicated is the machinery used for raising the heavy roof-beam, which is sometimes from eight to ten fathoms long, and five spans thick at the front end, and three spans thick at the rear end (Fig. 60).

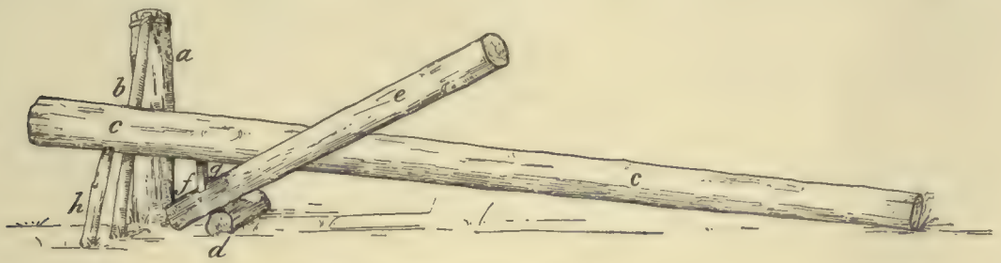


Fig. 60. Method of raising Roof-Beam.

After the post (*a*) has been raised, a strong slanting pole (*b*) is tied sideways against it. Along it the beam is raised, the front end first. The beam (*c*) is placed at the foot of the slanting pole, a log (*d*) being placed about a fathom back from the post. This serves as pivot for a lever (*e*), which has a mortise (*f*) near its short end, into which a lifter (*g*) fits which raises the beam when the lever (*e*) is pressed down. At the same time the beam is guided so that its end slides up along the slanting pole (*b*) towards the top of the post. Then its raised end is held in place by a temporary support (*h*), and the lever and lifter are re-adjusted so as to raise the beam still higher with the following movement.

Sometimes two poles tied together near their upper ends are used as guides. Their lower ends, which rest on the ground, are brought nearer and nearer together as the beam is raised up higher and higher.

When the beam approaches the top of the post (*a*), a stout plank is tied on the opposite side of the post, reaching a couple of feet higher than the post. It is to prevent the beam from rolling down on the other side. When it is in place, a similar plank is tied on that side of the post where the beam was rolled up. Then the opposite end of the beam is raised in the same manner.

The wall-beams of the house, which are not quite so heavy, are generally shored up, and are guided by men standing on top of the post, who hold the beams with ropes.

The cross-piece on the two door-posts is raised on boxes. These are

covered with planks, and more boxes are put on until a sufficient height has been reached. Generally the heavy roof-beam is first lifted so high that the cross-piece can be placed over the door-posts under it. This is done to avoid knocking down the cross-piece when the heavy beam is raised. The top of the cross-piece is slightly notched where the beam rests on it. The beam is placed on the front posts first. For this reason the posts always tend to lean slightly forward towards the front of the house, the beam while being raised up in the rear pressing them forward.

In all heavy structural work where simultaneous effort is required, the men use rhythmic cries to time their movements. Thus, in raising the roof-beam, the leader of the work gives the signal for his men by shouting "Wo!" The men respond with the shout, "We, we, we, we, we!" uttered in quick succession. Then they shove up the beam by pressing on the lever as described before, each effort being accompanied by a shout, "Ho!" As soon as the beam rests on top of the post or of the cross-piece, the leader shouts, "Hahaha!" thus indicating that the work is finished.

Other structural work is required for building dams across rivers, and embankments which hold up the street of the village. All of these are made of interlocked beams. Embankments (x̣wā'laqē) are made by placing heavy short logs into the slope that is to be built up so that their ends stick out. These logs are notched, and another heavy beam is laid across, which is to form the front of the embankment. Over this beam others are placed which are parallel to the first pair. These are also notched so as to fit the front beam and to support the next higher beam. Thus the whole front of the embankment is raised in a manner similar to our log-cabins. Then the space that is thus enclosed is filled in with hemlock-branches and with soil. This method of building foundations is also applied in building dams across rivers. In some places artificial dams are made, which are used for purposes of fishery (see Fig. 139). Here the foundation is made in the manner just described. Heavy posts are driven into the river-bed above the foundation logs, and planks are tied against these. Then the whole upper side of the dam is covered with hemlock-branches in order to facilitate the desposition of gravel above the dam.

Evidently this method of construction is very old, because it appears as one of the characteristic traits in the Ō^{g}maxtl!ā'łałē tradition, one of the most important origin traditions of the Kwakiutl Indians. It is stated in this tale that Ō^{g}maxtl!ā'łałē was given a house with interlocked foundation by his father-in-law, Q̣a'wadēlēqala, who belonged to the Knight Inlet tribe.[1] It may also be mentioned that the name of the old village X̣ulk^{u} of the Nᴇ'mgîs, at the mouth of the Nimkish River, means "interlocked foundation."

Here may be mentioned also the old method of erecting plank walls.

[1] See Vol. III of this series, p. 277.

These were held in place between pairs of poles, one set of poles being erected in front of the wall, another set behind it. These pairs of poles were connected with loops of cedar-withes that were twined around pairs of poles. The lowest plank was set down horizontally on the ground. The loop of cedar-withes was attached just over this plank, and the second plank was put up so that it rested on these cedar-withes overlapping the lower plank. Walls of this kind were used particularly in house-building. They were protected against the pressure of the wind by the heavy framework of the house.

In the modern house the method of wall-building has changed entirely. The planks are not put up horizontally, but vertically. A very heavy plank is put down edgewise, and is provided with a groove on its upper narrow face. The boards are cut off square, and are put up in this groove; while on top they are held together by a long cross-plank, against which they are nailed. The sides of the houses are also built of planks standing on end. These are put up below in a ditch, while above they fit into a groove in the lower side of the side-beam. Then the ditch is filled up again.

Examples of Wood-Work. — The method of wood-work may be illustrated a little more fully by describing the making of a number of utensils.

Digging-Stick. — For making a clam digging-stick (Fig. 61) a hemlock-

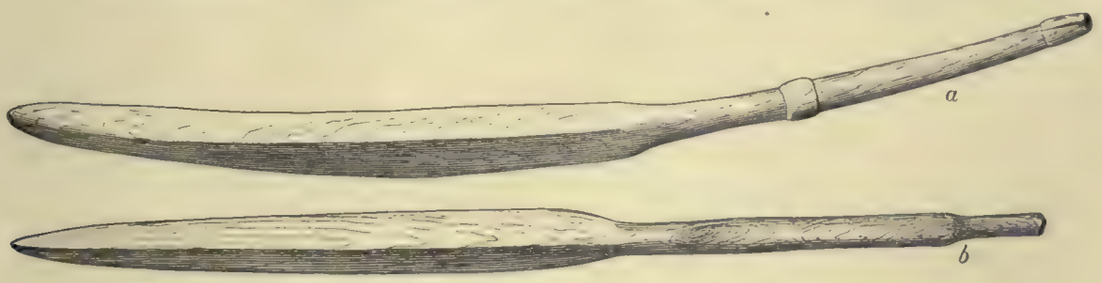


Fig. 61, *a* ($\frac{16}{230}$), *b* ($\frac{16}{238}$). Digging-Sticks. Length, 123 cm., 111 cm.

tree about 35 cm. thick is selected. A straight branch about 7 cm. thick and up to 1.5 metres long serves for making a long digging-stick; one of the same thickness and about 80 cm. long, for a short digging-stick. The under side of the branch is then cut off with an adze until the whole lower half of the branch has been removed. Then both sides of the branch are trimmed off so as to make it nearly square, while the upper side of the branch is hardly trimmed down at all. This side of the branch is called "the back," or "brittle back" (ʟ!Emwē′g·ē^{s}); while the lower side is called "stomach" (ō′k!waēdzē^{s}) or "soft stomach" (tsE′lq!wēdzē^{s}). After the branch has thus been squared, it is rounded, and the ends are sharpened in such a way that the upper side of the branch forms the point of the digging-stick. The tapering end has three faces, and is about 35 cm. long. After it is thus roughly shaped, the whole stick is finished with fine adzing (tsEẋwa′). The tapering points of the short

stick are made correspondingly shorter, about 25 cm. long. The sticks are kept over the fire for a number of days, until they are thoroughly dry and brittle.

Tongs. — Two types of thongs are used, — the fire-tongs, which serve for handling fire-wood and for lifting hot stones out of the fire; and tongs which are used as roasting-spits and for various other purposes. The former (Fig. 62, *a*) are used in the hand, and for this reason have a handle, which

Fig. 62, *a* ($\frac{16}{1303}$), *b*, *c* ($\frac{16}{1057}$). Tongs. Length: *a*, 149 cm.; *b*, *c*, 100 cm.

is cut off square. Small tongs which are used with one hand are about 80 cm. long, while large fire-tongs are 150 cm. long. Roasting-tongs (Fig. 62, *b*, *c*) are stuck into the ground, and have a pointed end. All tongs are made of red-pine wood (wunā′guł). This is generally taken from fallen trees, which break up in falling and make it easy to pick out a long straight piece. Medium-sized tongs are about a metre long. A piece of wood about 7 cm. square is cut out and split through the middle at one end, about halfway down. Then the handle end is whittled out, either square or pointed, according to the kind of tongs that are to be made. Next a twisted cedar-withe is wrapped firmly around the piece of wood just above the handle, beginning with the thin end. The thick end of the withe is tucked under the wrapping. After this has been done, the central split, by means of which the legs of the tongs are formed, is continued down to the binding.

Tongs with square end have no ring of cedar-withes, because the end is so thick that it does not readily split.

Boxes. — It has been stated before that boxes are bent out of wood. The plank that is used for an ordinary box is one finger or a finger and a half in thickness. The plank is made straight by sighting along the edge. The method of measuring and of laying off the kerfs will be described in the chapter on measurements. After the sides have been laid out, the last side of the box, which meets the first side after it has been bent over, is made shorter than the first side by an amount almost equal to the thickness of the wood; so that when the wood is bent over and the ends are joined together, the opposite sides will be of equal length. The laying-out of kerfs to make boxes of various forms is a highly developed art. By a combination of slanting kerfs the peculiarly shaped hunting-boxes with flaring sides are made (see

Fig. 122). Slanting kerfs are used also in making the cradle. I have not seen any specimens of boxes with wide bulging sides, such as were made by the northern tribes, and which required kerfs of very complicated form to secure accurate joints. After the kerfs have been made, the board is steamed. A number of small ditches are made in the floor of the house, as wide as the board, and each ditch under one of the kerfs. Stones are heated on the fire, and are taken up with tongs and put into the ditches. Then water is sprinkled on the hot stones, as described before (p. 331). The board is placed on the ditches, and when it is hot it is bent over. The bend at each kerf is carried so far that the sides form somewhat acute angles; so that in the final adjustment the wood does not need to be bent any more to bring the ends together, but may be slightly bent back. The methods of sewing the box have been described (p. 336). When the sides have been finished, the box is turned bottom-side up, and if necessary the bottom is planed with a crooked-knife. Then the board for the bottom is made. It is two fingers or more thick, and is split off from near the outside of a tree, so that the rings of the tree run nearly parallel with the surface of the board. The sides of the box, which have been sewed together and adjusted so that they are square in cross-section, are placed on this board, and both the inner line and the outer are marked with the back of the knife. Then the bottom is cut, following the outer line which has thus been marked. Next the thickness outside of the inner line is reduced to one finger-width; so that the sides of the box, when put on to the bottom, slide over that portion which is to form the bottom of the inside. The bottom inside is slightly hollowed out. After all this is done, the bottom of the sides is blackened as described before (p. 337), and is pressed on, and the bottom board is shaved off until a continuous black line is marked on it by the blackened bottom of the sides. After this the bottom is pegged on (see p. 337). Next the box is put on its side, and the carpenter kneels down and presses the box against his knees and shaves off the broken fibres that stick out at the edges. Next a rather deep line is cut parallel to the bent edges and to the top of the box at a distance of from one to three finger-widths from the edges and top (see Fig. 97). The space surrounded by these lines is fluted by being shaved down with a crooked-knife.

The plank for the top of a large box is as thick as the distance from the tip of the first finger to the interstice between the thumb and first finger. It is so selected that the high end of the cover is a radial section of the tree, while the surface of the cover is a tangential section. After the sides of the plank have been marked off in the same way as the sides of the bottom, the peculiar curve of the top is indicated with the marking-wedge (see p. 324 and Fig. 52). Then small carpenter's wedges are driven in slowly along the line marked with the marking-wedge until the superfluous part of the wood has been split off. Then the cover is completed by adzing. After

all this has been done, the top of the sides of the box is blackened, and the lid is put on. In this way the outlines of the inner side of the box are marked. The portion of the lid which lies outside of this line is whittled off in the same way as was done with the bottom. Thus the lid is made to fit on tightly, and does not wobble even when it is not tied on.

Canoes. — The making of a canoe was described to me as follows: —

When a man wants to make a canoe, he goes into the woods to look for a large cedar-tree. He carries his chisel. As soon as he finds a large tree, he cuts a small hole in it. He tries to reach the heart of the wood in order to see if it is sound. That is what the canoe-builder calls "feeling into it." If the heart of the tree is not rotten, he goes home at once, and on the following day he goes out, carrying his axe in order to fell the tree.

When he arrives, he looks for the branch side of the tree, and cuts it, that the tree may fall on the branches. The canoe-maker takes his chips and throws them at the place where he wants the cedar-tree to fall. As soon as he hears the wood cracking, he prays, "Do not fall too heavily, else you, great magician, will be broken." Then the cedar falls.

At once the canoe-builder measures off the length of his intended canoe, and cuts the tree. Then he chops off the branches, and cuts out what is to be the stern of the canoe. This is called the "rough cutting-out." Now he goes home.

Then the canoe-maker stops lying with his wife, for the first men said

Hë'ˢmaasēxs g·ā'laē lēq!ēxsdēda bE- 1
gwā'nEmē, la qā'sˢīd lā'xa ā'L!ē ā'läx
ɬEkwa' wî'lkwa; dā'laxēs q!E'ldayu.
G·î'lˢmēs q!ā'xa ɬEkwē' wî'lkwa la'ē
q!E'ltbEtEndxa t!ō'xbidaˢwē, lā'lag·aa 5
läx dō'maqasa wî'lkwē. LaE'm dō'-
qwax qō q!u'lsa lā'xēda ā'ˢwaqaˢyasa
wî'lkwē. Hë'Em gwôˢyō'sa lē'q!ēnoxᵘ
p!ē'wiLē. Hë'x·ˢidaˢmēs g·ā'x nä'ˢna-
kwa, la'ē k!ēs q!u'lsē ā'ˢwaqaˢyasa wî'l- 10
kwē. La LE'nsa la'ē dā'laxēs sō'bayu
qaˢs lē sō'p!axōdxa wî'lkwē.

G·î'lˢmēs lā'g·aa lāq, la'ē dō'qwaLax
wî'lEmasa wî'lkwē. G·î'lˢmēs q!ā'xa
wî'lEmas la'ē sō'p!axōd ō'k!waēdzaˢyasa 15
wî'lkwē qa haxˢwu'lsēs qō tā'x·ˢîdLō.
Hë'mEnałaᶜmēda lē'q!ēnoxwē dā'x·ˢîd-
xēs sō'yapmutē qaˢs ts!Eqē's lā'xēs
gwôˢyō' qa gwē'xtōx̣ˢwīdaatsa wî'lkwē.
G·î'lˢmēs hē'łmElq!wā'lēda wî'lkwē, la'ē 20
yā'q!eg·aˢłēda lē'q!ēnoxᵘ ts!E'lwaqa qa
k·!ē'sēs â'L!Elsa, "ā'Las k·ō'xˢwElslāx,
nau'alax̣ᵘdzēk·as," ˢnē'k·ēda lē'q!ēno-
xwē. La t!ā'x·ˢîdēda wî'lkwē.

Hë'x·ˢidaˢmēsēda lē'q!ēnox̣wē bā'ł- 25
ˢîdEx wā'sgEmasLasa x̣wā'k!unaLē. La
ō'xsˢEndEq. G·î'lˢmēs lā'xsˢa la'ē sō'-
p!îdxa L!Enā'k·ē. La sō'p!îdxa â'g·iwēLē
ɬEˢwa aˢwō'dzēLē. La gwā'łēda â'g·i-
waˢē la'ē lā'xa ō'xɬaˢē qaˢs sō'p!îdēq 30
ɬEˢwa ē'wanuxˢExɬē'Lē. La gwā'ła.
Hë'Em gwôˢyō'sa lē'Elq!ēnoxwē k·!î'm-
sa. La nä'ˢnakwa.

LaE'm gwāł kuˢlī'łēda lē'q!ēnoxwē
ɬEˢwīs gEnE'mē qaxs ˢnē'k·aēda g·ā'lē 35

that canoe-makers must not sleep with their wives, lest they find rotten places in the cedar-tree; people who split boards also do not sleep with their wives. They never comb their hair, else the ends of the canoe would split, or the board would split.

On the following morning the canoe-builder starts; and, as soon as he arrives, he chops out the sides and ends of the canoe. When this has been done, he chops the outer sides. As soon as this is done, he chops the inside, and makes it level with the sides of the canoe. Then he turns the canoe over with a lever; and when the canoe is turned over, he chops the outside of the canoe, chopping off the sap of the cedar-tree. The first to be chopped by the canoe-builder is the bottom of the canoe, and all the sap of the cedar is off. Then he tries to make (the bottom) straight. When this is done, he adzes the outside of the canoe, for the outside of the canoe is first finished, for the inside is shaped according to the outer side. When the outside is finished, the canoe is turned right-side up, and is supported by poles on each side. Then he goes home.

In the morning of the following day he walks and searches for a yew-tree for his crooked wedge. Its name is "lifting up the head of the canoe." He finds a yew-tree, chops it down, and finishes twelve wedges. Then he takes cedar-withes for the crown of the wedges. He twists them. And when he has finished, he goes home. As soon as he arrives at his house, he adzes the wedges, making the wedge that is called "lifting up the head of

bEgwā'nEma qa k·!ē'sēs ku'lī'łēda LĒ'El-q!ēnoxwē Ļᴇ^{s}wīs gEgEnE'mē ā'La q!ul-samE'nqulalā'xēda wî'lkwē; Ļᴇ^{s}wa łā'-t!aēnoxwē, k·!ē's^{s}Em^{s}xaa ku^{s}lī'ł Ļᴇ^{s}wīs ganE'mē. K·!ē's^{s}Em^{s}xaa xap!ē'noxwa ā'La^{s}laē xō'xobalaxēda ẋwā'k!una, ā'La-^{s}laē xâ'laēda saō'kwē.

La ^{s}nā'x·^{s}īdxa gaā'la, la'ēda LĒ'q!ē-noxwē qā's^{s}ida. G·î'l^{s}mēs lā'g·aa, la'ē sō'p!īdxa ō'gwäqēLasa ẋwā'k!una Ļō^{s} ō'ba^{s}yas. La gwā'ła la'ē sō'p!īdEx ō'sgEma^{s}yasa ogwä'qa^{s}ē. G·î'l^{s}mēs gwā'ła la'ē sō'p!īdxa ō'xsē qa ^{s}nEmā'-g·ēqēs Ļᴇ^{s}wa ogwä'qa^{s}yasa ẋwā'k!una. La gwā'ła, la k!wē't!īdEq qa qap!E'lsēs. G·î'l^{s}mēs qap!Esē'da ẋwā'k!una la'ē sō'p!ēdEx ō'sgEma^{s}yasa ẋwā'k!una; sō-pâlaxa xō'tsēk·a^{s}yasa wî'lkwē. Hë'^{s}mîs g·îl sō'p!ītsō^{s}sa LĒ'q!ēnoxwēda a^{s}wā'bâ-^{s}yasa ẋwā'k!una, la'ē wî'lēda xō'dzē-qa^{s}yasa wî'lkwē. LaE'm ^{s}nā'^{s}naqElaaq. G·î'l^{s}mēs gwā'ła la'ē k·!î'mł^{s}īdEx ō'sgE-ma^{s}yasa ẋwā'k!una, qaxs hë'^{s}maē g·îl aë'k·asa^{s}wēda ō'sgEma^{s}yasa ẋwā'k!una qaxs hë'^{s}maē hë'^{s}mēsōsa ō'xsēda ō'sgE-ma^{s}ē. La gwā'łēda ō'sgEma^{s}ē la'ē t!ā'x^{s}Elsxa ẋwā'k!una qa qē'qatEnutsEl-sēx. La nä'^{s}nakwa.

La ^{s}nā'x·^{s}īdxa gaā'la la'ē qā's^{s}īd qa^{s}s lē ā'läx L!E'mq!ä qa^{s}s LE'mg·a^{s}yuxa qō'LEla. Hë'Em Ļē'gadEs wī'xtōLExs. La q!ā'xa L!E'mq!ē. La sō'p!īdEq. La gwā'łaxa ma^{s}łts!ā'qEg·u LE'mg·a^{s}yu. La ax^{s}ē'dxa dEwē'xē qa wu'lxEtawēsa LE'mg·a^{s}yu. La sE'lp!ēdEq. G·î'l^{s}mēs gwā'ła la'ē nä'^{s}nakwa. G·î'l^{s}mēs lā'-g·aa lā'xēs g·ō'kwē la'ē k·!î'mł^{s}īdxa LE'mg·a^{s}yu. LaE'm LE'mg·ila. Hë'Em wī'xtōLExsLē. La wu'lxtōtsa dEwē'xē lāq qa k·!ē'sēs xō'xtōx^{s}wīdēda LE'm-

the canoe." Then he puts on the ring of cedar-withes, that the top of the wedge may not split. He finishes them, and burns the end of the wedges, and hangs them up over the fire of the house, so that the wedges become brittle.

On the morning of the next day he starts, and arrives at the canoe that he is making. Immediately he chops out (the wood) in lengths of three spans from the inside of the canoe. Sometimes it takes four days, and sometimes it takes twelve days, for the canoe-builder to chop out the blocks from a large canoe. When he finishes chopping out the blocks, he goes home to get his wedges.

On the morning of the following day he carries his wedges, and arrives at the canoe he is making. Right away he wedges out the bow of the canoe, while the canoe-builder is saying, "O supernatural one, friend, you shall rest easy on the ground!" Thus the canoe-builder says while he is at work with his wedges. He takes out the blocks and chops the inside of the canoe. As soon as the canoe begins to be thin, the canoe-builder goes home. Immediately he asks his friends (to help him) pushing the canoe out of the woods.

On the morning of the following day he starts with all those whom he has asked (to help him). As soon as they arrive, they push it; and when they get there, they at once turn the canoe over, and poles are across the ends to keep the canoe off from the ground. Then he adzes the outside of the canoe. Now it is nice, for the outside is finished.

g·a^{s}yu. La gwā'ɬamāsa. La k!u'mɛlbɛndxa lɛ'mg·a^{s}yu qa^{s}s tē'x^{s}wāliɬēq lāx ë'k·la^{s}yasa lɛgwī'ɬē qa l!ɛ'mx^{s}wīdēs ^{s}naxwē'da lɛ'mg·a^{s}yu.

La ^{s}nā'x·^{s}īdxa gaā'la, la'ē qā's^{s}īda. La lā'g·aa lā'xēs lē'qa. Hë'x·^{s}ida^{s}mēs tɛ'mkwaxa yū'duxup!ɛnk·ē wā'sgɛmasas tɛ'mkwa^{s}yas lā'xɛns bā'ɬax lā'xa ō'xsasa xwā'k!una. ^{s}nā'ɬ^{s}nɛmp!āna mō'p!ɛnxwa-^{s}sa ļōxs ma'^{s}ɬɛxsag·ugwīlaē tɛ'mkwēda lē'q!ēnox^{u} lā'xa ^{s}wā'lasē xwā'k!una. La gwāɬ tɛ'mkwa, la'ē nä'^{s}nakwa; laɛm dā'xēs lɛ'mg·a^{s}yu.

La ^{s}nā'x·^{s}īdxa gaā'la, la'ē ō'xɬalaxa lɛ'mg·ayu. La lā'g·aa lā'xēs lē'qa. Hë'x·^{s}ida^{s}mēs lɛ'mx·^{s}īdxa â'g·iwa^{s}yasa xwā'k!una. La ^{s}nē'k·ēda lēq!ēnoxwē: "Wä, nau'alakwē; waLâ'^{s}lag·îls^{s}ɛmlɛs qastä'," ^{s}nēg·itâ'^{s}ēda lē'q!ēnoxwaxs lɛ'mk·aē. La ^{s}wī'^{s}lāmasxa tɛ'mg·îk^{u}. La sō'p!īdxa ō'xsasa xwā'k!una. G·î'l-^{s}mēs pɛ'lpɛlēda xwā'k!una, g·ā'xaēda lē'q!ēnox^{u} nä'^{s}nakwa. Hë'x·^{s}ida^{s}mēs hē'laxēs ^{s}nē^{s}nɛmō'kwē qa wixwuɬt!ā'lōdēsēxa xwā'k!una.

La ^{s}nā'x·^{s}īdxa gaā'la, la'ē qā's^{s}īd ^{s}wī'la ļɛ^{s}wēs hē'lanɛmē. G·î'l^{s}mēs lā'-g·aa la'ē wī'x^{s}wīdɛq. G·āx lā'g·aa gwā'ɬɛla^{s}mēs qap!ɛ'lsxa xwā'k!una. Laɛ'm qē'qebā'lēda dzō'xum qa wī'^{s}sēsa xwā'k!una. La k·!î'mɬ^{s}īdɛx ō'sgɛma-^{s}yasa xwā'k!una. Laɛ'm ë'k·a qaxs lɛ^{s}ma'ē gwā'lēda ō'sgɛma^{s}ē.

As soon as this is done, he drills holes through the outside. The drill-holes are two spans apart. When he is through with his drilling, he measures the bow of the canoe, a length of more than a fathom; and he measures the stern of the canoe, also more than one fathom; and he adzes it so that it is nice. As soon as this is finished, he turns over the canoe. He takes his adze and chops down the inside to the ends of the drill-holes. As soon as he reaches the drill-holes, it is done. He does so at all the holes that he had drilled; and as soon as he sees all the drill-holes, he measures with a hemlock-twig through the holes. One thickness of our forefinger is the thickness of the sides of the canoe, and two finger-widths is the thickness of the bottom; and the side of the bow is just the same as the bottom, and also the side of the stern. He finishes adzing the places between the drill-holes. He finishes when he has made nice and when he has adzed the inside of the canoe.

When it is finished, he goes to get much fire-wood and stones, and he builds up the wood and the stones. He does not put fire under it at once, but he splits cedar-wood. He draws water and pours it into the canoe, — twelve bucketfuls of water and four bucketfuls of urine. When this is finished, the canoe-builder sets fire to the wood and stones. The fire blazes up. The canoe-maker does not allow any person to look at the canoe, lest the canoe crack when it is spread. Then he ties up the cedar-wood to burn the bottom.

G·î'l^{s}mēs gwā'ła, la'ē hë'x·^{s}idaEm sE'lx·^{s}īdxa ō'sgEma^{s}ē. Hama'^{s}łp!Enk·âlēda sEla'ē. La gwāł lā'xēs sE^{s}lē'naē la bā'ł^{s}īdxa k·!â'xōdē ē'sEg·iwēda wā'sgEmasas. La bā'ł^{s}īdxa k·!êt!ExḶE'ndē ē'sEg·iuEmxaa. La sō'plīdEq qa^{s}s ë'k·îx·^{s}īdēq. G·î'l^{s}mēs gwā'ła la^{s}ē t!ax^{s}ī'dxa x̣wā'k!una. La ax^{s}ē'dxa gā'xayu qa^{s}s qE'ns^{s}idēxa nEx·â'sa sElē'x·däs. G·î'l^{s}mēs lā'g·aa lā'xa sEla'^{s}ē, la'ē gwā'ła. ^{s}nā'x̣wa^{s}mēs hë gwē'g·ilaxēs sElë'x·dē. G·î'l^{s}mēs ^{s}wī'la dō'qulaxēs sElē'x·dē, la^{s}wīs Ḷa ^{s}mE'nsasa q!wa'xtsEs lā'xa sE'la^{s}ē. ^{s}nE'mdEn lā'xEns ts!Emā'laxts!ana^{s}ēx, yîx wō'gwasasa ē'wanudza^{s}yasa x̣wā'k!una. La mā'^{s}łdEnē wō'gwasasa a^{s}wā'bâ^{s}ē ḶE^{s}wē'da pEla^{s}ē. ^{s}nEmā'x·îs ḶE^{s}wa a^{s}wā'bâ^{s}ē ḶE^{s}wa ē'^{s}wanū!lExḶa^{s}ē. La gwāł k·!î'mLâlaxa awā'qawa^{s}yasa sEla'^{s}ē. G·î'l^{s}mēs ^{s}wī'la la'ē ë'k·îx·^{s}īd tsEx^{s}wī'dxa ō'xsasa x̣wā'k!una.

La gwā'ła, la'ē anē'qaxa q!ē'nEmē lEqwa' ḶE^{s}wa t!ē'sEmē. La t!ē'qwap!īd. K·!ēs hë'x·^{s}īd mē'nabōdEq. La xō'x^{s}wīdxa k!waxLā'wē. La tsē'x·^{s}īdxa ^{s}wā'pē qa^{s}s gux^{s}ā'LExsElēs lā'xa x̣wā'k!una. Mā'^{s}ltsEmag·iu nā'gats!ēda ^{s}wā'pē, la mō'sgEm nā'gats!ēda kwä'tsē. La gwā'ła, la'ēda Lē'q!ēnoxwē mē'nabōdxa t!ē'qwapē. La x·ī'x^{s}ēdēda gu'lta. K·!ē'sēda Lē'q!ēnoxwē hē'łq!ālaxa bEgwā'nEmē g·āx x·ī'tsax·îlaxa x̣wā'k!una, ā'La^{s}laē hō'x^{s}wīdēda x̣wā'k!unaxs la'ē LEpā'sE^{s}wa. La yā'Lōtxa k!waxLā'wē qa^{s}s tsē'nabo^{s}yōL.

When this is done, he makes tongs of red pine, for it is hard. When this is done, he takes a rest. As soon as all the stones are red-hot, the canoe-builder takes the tongs, picks up the hot stones, and puts all the stones into the canoe. Then the water begins to boil. He takes a bailer and sprinkles both sides of the inside of the canoe and its ends, and he sets fire to the sticks with which to burn the bottom. As soon as they catch fire, he burns the bottom of the canoe, and he continually sprinkles the inside with the water. As soon as the whole canoe is hot, he spreads the inside of the canoe with thin pieces of cedar-wood. Then the canoe begins to spread out.

When this is done, he takes the canoe-seats and sews them on. When this is done, he takes the strip for the gunwale and pegs it on. He cuts out with his adze the bow-piece and pegs it on, and also the stern-piece. Then he grooves the bow-piece. When this is done, he puts in the mast-thwart. That is the end.

La gwā'ła, la'ē ts!ē'sLālag·ilaxa wunā'-guł qaxs p!ē'saē. La gwā'ła, la'ē x·ō's^{s}īda. G·î'l^{s}mēs ^{s}nā'ẋwa x·ī'x·îxsEm-x·^{s}īdēda t!ē'sEmē, la'ēda LE'q!ēnoxwē dā'x·^{s}īdxa ts!ē'sLāla qa^{s}s k·!ap!ē'dēxa ts!E'lqwa t!ē'sEm qa^{s}s ax^{s}ā'LEXsEl^{s}ē^{s}s lā'xa ẋwā'k!una. La ^{s}wī'lēda t!ē'sEmē, laE'm mEdE'lx^{s}wīdēda ^{s}wā'pē. La dā'-x·^{s}īdxa tsē'xLa qa^{s}s xō's^{s}īdēx wā'xsanē-guxsasa ẋwā'k!una ḷE^{s}wa ō'ba^{s}yas. La mē'x·bEndxa tsē'nabo^{s}yuLē. G·î'l^{s}mēs x·ī'x^{s}ēdaxs la'ē tsē'napaxa ẋwā'k!una. Hë'mEnała^{s}mēs la xō'sasa ts!E'lqwa ^{s}wāp lā'xa ō'xsē. G·î'l^{s}mēs ^{s}nā'ẋwa ts!E'lx^{s}wīdēda ẋwā'k!una la'ē qat!ē'tsa tē'stEsē k!waxLā'wē lāx ō'xsasa ẋwā'-k!una. Hë'^{s}mis la LEpE^{s}nā'ku^{s}latsa ẋwā'k!una.

La gwā'ła la'ē ax^{s}ē'dxa ḷE'x·îxsLē, la t!E'mg·aāLElōdEq. La ax^{s}ē'dxa ẋwā'-ẋuLäqēLē qa^{s}s ḷEp!ā'LElōdēq. La k·!ī'mł-^{s}īdxa ^{s}mEgug·ī'wiLē qa^{s}s ḷEp!ā'LElōdēq ḷE^{s}wa ō'xḷa^{s}ē. La xu'lx·^{s}īdxa ^{s}mEgu-g·ī'wa^{s}ē. La gwā'ła, laē ax^{s}ā'LElōdxa kwā'wo^{s}yō. LaE'm gwā'ła.

The following detailed description of the building of a canoe was given to Mr. Hunt by a Nā'k!wax·da^{s}x^{u}:

Now the cedar-tree lies on the ground on its smooth side. That is referred to as the smooth side, — the best side, that has no branches. That is the belly of the cedar. And the side with branches is its back.

And first the canoe-builder chops down a slim, long, young cedar, sometimes three or four fathoms is the size (length) of the young cedar. He clears off the branches while it is lying on

Wä, la^{s}mē hEx^{s}u'lsēda wî'lkwaxēs wīlE'mē. Wä, hë'Em gwô^{s}yō' wī'lEmē ë'x·k·!ōt!Ena^{s}yasxa k·!eâ'sē L!Enā'k·a. Wä, hë'Em tEk·!ē'sa wî'lkwē. Wä, hë'^{s}mēs a^{s}wī'g·ēsēs L!Enx·k·!ōt!Ena^{s}ē.

Wä, hë'^{s}mis g·îl ē't!ēd sō'p!Exōtsō^{s}sa LE'q!ēnoxwa wī'łē g·î'lt!a dzEsEqwa', yîxs ^{s}nā'l^{s}nEmp!Enaē yū'duẋ^{u}p!Enk· ḷōxs mō'p!Enk·aē lā'xEns bā'läqē awâ'sgE-masasa dzEsEqwē'. Wä, lē ē'kwēt!ēd-

the ground, so that all the branches are off from its body. As soon as all the branches are off, he chops off the top, so that it comes off.

Then he shoves it into the rotten hollow of the cedar. As soon as it qēxs la′ē tɬā′sa qa wīlâ′wēsa ḷE′nk·ēdEmas. Wä, g·îˀlˢmēsē wīlâ′g·îɬEnē ɬE-nā′k·asēxs la′ē sō′pōdEx ō′xtâˢyas qa lā′wīēs.

Wä, lē ɬE′ngēLas lāx axā′yasa wîˀl- 5
kwē. Wä, g·îˀlˢmēsē lā′g·aa lā′xa

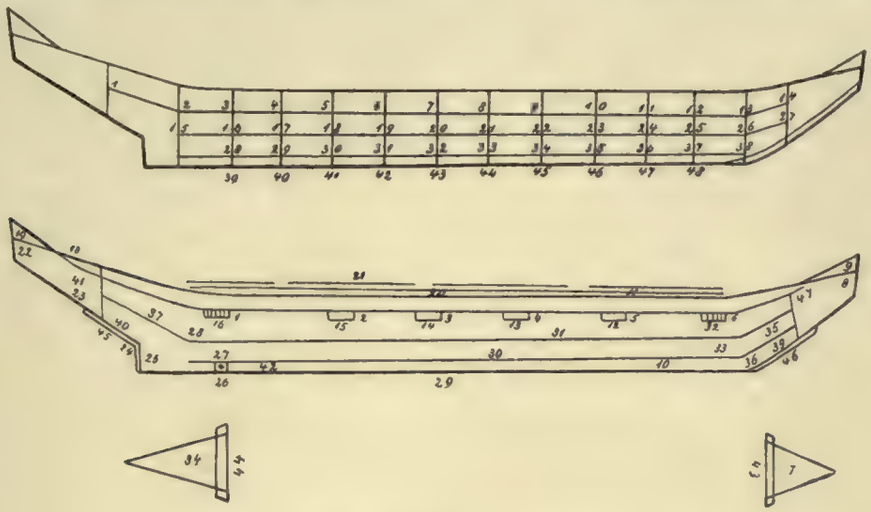


Fig. 63. Diagram illustrating the Making of a Canoe.

1. TɬE′mbēsa kwā′wôᶜyō ḷā′sa ɬā′pɬēqē. *Sewing at end of "mast-thwart with hole."*
2. TɬE′mbēsa ḷEx·EgExɬēxa kwā′woᶜyâs ḷaa′sē ɬā′pɬēq. *Sewing at end of thwart aft of the one with hole.*
3. TɬE′mbēsa ˢnEgō′yâwē ḷEx·Exs. *Sewing at end of middle thwart.*
4. TɬE′mbēsa ḷEx·EqawEwēyē. *Sewing at end of thwart in between.*
5. TɬE′mbēsa ḷEx·ExstEwīɬExsē. *Sewing at end of bailing-thwart.*
6. TɬE′mbēsa ḷEx·Eq!Exḷēˀˢ. *Sewing at end of stern-thwart.*
7. ḷat!Exḷē. *Stern-seat.*
8. Ō′xḷaᶜˢē. *Stern.*
9. Haguxḷē′. *Stern-piece.*
10. ŌstEwɬExsē. *Bailing-hole* (= eye inside of canoe).
11. K·ā′tēdEm. *Gunwale protector.*
12. ḷEx·ExstEwī′ɬExsē. *Bailing-hole thwart.*
13. ḷEx·EqwEwē. *Thwart in between.*
14. ˢnEgō′yEwēɬExs ḷEx·E′xs. *Middle thwart.*
15. ḷEx·EgExɬē′xa kwawoᶜyâ′s ḷaa′sē ɬā′pɬēq. *Thwart behind the one with hole.*
16. Kwawoᶜyō ḷasa ɬā′pɬēq. *Mast-thwart with hole.*
17. Â′xaɬExsEla. *Slanting part of bow.*
18. Ō′xḷaatawēˢ. *Nape of neck.*
19. Hagug·īwēˢ. *Bow-piece.*
20. K·Edzasä′gēˢ. *Paddle-stroke outside.*
21. ME′lmElxwägē. *Twister outside.*
22. Â′g·iwēˢ. *Bow.*
23. Awā′bōsx·äēˢ. *Under chin.*
24. Ō′xawēˢ. *Neck.*
25. K·!ē′gEm. *Water-cutter.*
26. ˢmEgu′xs. *Mast-step.*
27. Ō′xḷäLElāsa k·!ē′gEmē. *Rear end of water-cutter.*
28. E′wanūLEmēˢ. *Cheek.*
29. Awā′bâᶜē. *Bottom.*
30. Dzē′g·ExdzEmēˢ. *Inner rounding of canoe-bottom.*
31. E′wawanēqˣ. *High sides inside of canoe.*
32. ḷEx·Eq!ExḷE. *Stern-thwart.*
33. Awā′bōL!Exḷēˢ. *Under side of stern.*
34. Ḷā′dEg·īwēˢ. *Bow-seat.*
35. Ō′nōL!Exḷaēˢ. *Side of stern.*
36. SEg·ExdzE′m. *Harpoon-place in canoe.*
37. Ō′nuLEmaᶜˢē. *Cheek* (see 28).
38. Q!ax·q!ax·sa′ēˢ. *Straight-line mark inside of canoe.*
39. K·!Et!Exḷēˀˢ. *Extension of stern.*
40. K·!Edabōsx·a′ēˢ. *Extension under chin.*
41. Ō′ts!âɬg·iwēˢ. *Inside of bow.*
42. Ła′tēˢ. *Cut away.*
43. Çē′bäsa Ḷā′t!Exḷēˢ. *Cross-piece of stern-seat.*
44. Çē′bäsa Ḷā′dEg·ī′wēˢ. *Cross-piece of bow-seat.*
45. Wī′gumx·äᶜˢē. *Strengthening of water-cutter.*
46. Wī′gumxḷaᶜˢē. *Strengthening of stern.*
47. Tɬē′g·ats!ExḷE. *Stern back-rest.*

reaches the hard (wood), he drives in the end of his measure of the depth of the rotten hollow of the cedar, — for all cedars of the woods have rotten hollows.

As soon as the young cedar measure ceases to go in, he pulls it out. Then he places it lengthwise on the cedar, beginning at the butt-end. As soon as he sees how far the top of the young cedar measure goes in, he adds one fathom to the end, beginning at the end of the young cedar measure. Then he chops into it at the end with his axe.

He does not chop in deep, then he chops off the branches of the cedar, beginning at the place where he has chopped into it. As soon as he has removed all the branches, he measures the length of the little spearsman's canoe that is to be made. The length of the small spearsman's canoe that is to be made is just four fathoms, and he chops into (the tree) at the end of the four fathoms. There he chops it through. As soon as it is (cut) through, he goes to the thick end of the cedar and cuts it through also.

As soon as it has been cut apart, he measures one fathom from the thick end of the cedar and chops into it. As soon as it is deep enough, he stops chopping it. That is to be the bow of the small canoe.

As soon as he has chopped in deep enough at the thick end of the cedar, that is to be the bow of the canoe that is being made, then he measures one fathom from the outer end of the thin end of the cedar and chops into that also. As soon as that also is

p!ē'säxs la'ē xā'L!Ex·ᵍīdaEm dē'xᵍwēdEx ō'baᵍyasēs ᵍmE'nyayâx wā'sgEmēLElasasa axā'ᵍyasa wî'lkwē, qaxs ᵍnā'ẋwaᵍmaē ē'EXEkwa wī'wîlkwaxsa ā'L!ēx.

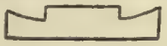
Wä, g·î'lᵍmēsē gwāł sE'ẋᵘts!a laē'LElē dzESEqwē' ᵍmE'nyaᵍyâsēxs la'ē nēXEwī'lsaq. Wä, lē k·ā't!Ents lā'xa wî'lkwē, g·ä'g·iLEla lāx ō'xɬaᵍyas. Wä, g·î'lᵍmēsē la dō'qulax wE'lg·iLElāsas wī'łEtâᵍyasēs dzESEXᵍu'nē ᵍmE'nyaᵍyâxs la'ē bā'łbEntsa ᵍnE'mp!Enk·ē lā'xEns bā'łax g·ä'g·iLEla lāx ō'baᵍyasa dzESEXᵍu'nē ᵍmE'nyaᵍyâ. Wä, lē sō'pbEtEntsēs sō'bayuwē lāq.

Wä, k·lē'st!a k!wä'bElē sō'paᵍyasēxs la'ē g·ä'g·iLEla lā'xēs sō'bEtEndaᵍyaxs la'ē sō'pâlax L!E'nk·ēdEmasa wî'lkwē. Wä, g·î'lᵍmēsē ᵍwīlâ'g·îłEnē L!E'nk·ēdEmasēxs la'ē ba'łᵍīd qa wā'sgEmatsēs LE'qaLē alē'wats!ē ẋwā'ẋwaguma. Wä, lē nE'xnEqEla mō'p!Enk·ē bā'LaᵍyasqaEwā'sgEmg·ig·aatsēs LE'qaLē alē'wats!ē ẋwā'ẋwagumaxs la'ē ē't!ēd sō'bEtEndEx ō'baᵍyasa mō'p!Enk·ē. Wä, laE'm hē'xsEnd sō'p!ēdEq. Wä, g·î'lᵍmēsē lā'sElsExs la'ē lā'xa ō'xɬaᵍyasa wî'lkwē qaᵍs lē'ᵍxat hē'x·sElsa sō'p!ēdEq.

Wä, g·î'lᵍEmᵍxaā'wisē lā'x·sElsExs la'ē bā'łᵍīdxa ᵍnE'mp!Enk·ē lā'xEns bā'Lax lā'xa ɬEkwō'maᵍyasa wî'lkwē. Wä, lē sō'bEtEndEq. Wä, g·î'lᵍmēsē hë'łᵍabEtaxs la'ē gwāł sō'paq. Wä, hë'Em â'g·iwīłtsa ẋwā'ẋwagumLē.

Wä, g·î'lᵍmēsē hë'łᵍabEtē sō'paᵍyas lā'xa ɬEkuma'ᵍyasa wî'lkwē, yîxa â'g·iwīLasa LE'qasEᵍwas; wä, lē bā'łᵍīdxa ᵍnE'mp!Enk·ē g·ä'g·iLEla lāx mā'x·baᵍyasa wī'łbaᵍyasa wī'lkwaxs, lā'axat sō'bEtEndEq. Wä, g·î'lᵍEmᵍxaā'wisē hë'łᵍābEtaxs la'ē gwāł sō'paq lā'xēs

deep enough, he stops chopping it, for he finishes his splitting beginning at the outer end and sloping down. And he does also as he has done at the bow. Then it is thus.

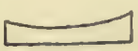


ǥwā′ɬElaēnē^{s}mē łatâ′laq g·ä′g·îLEla lā′xa mā′x·ba^{s}ē sē^{s}nō′qwāła. Wä, lā′^{s}xaē hë′Em ǥwē′x·^{s}īdxa â′g·iwīLē. Wä lā′g·a ǥwä′łēg·a.

As soon as he finishes chopping, then he measures off three spans,[1] and he chops into it there. As soon as he reaches four finger-widths deep with his chopping, he splits off the block (that he has made). And where it is all split off down to where he has chopped, then he chops again into it at the same place where it was first chopped. As soon as it is down to the depth of the first chopping (of the bow), he splits it off again.[2]

Wä, g·î′l^{s}mēsē ǥwāł sō′paxs la′ē bā′ł^{s}īdxa yū′duẋ^{u}p!Enk·ē lā′xEns q!wā′-q!wax·ts!ana^{s}ēx.[1] Wä, lē sō′bEtEndEq. Wä, g·î′l^{s}mēsē mō′dEnbEtē sō′pa^{s}yas lā′xEn q!wā′q!wax·ts!ana^{s}yaqē sō′pa^{s}yasēxs la′ē łā′tōdxēs tEmkwa′^{s}ē. Wä, g·î′l^{s}mēsē ^{s}wī′lâ łā′tōdEq, yîxs la′ē lā′xḷēs sō′pa^{s}ē, wä, lā′^{s}xaē ē′t!ēd sō′bEtEng·Eq lā′^{s}xaaxēs g·î′lx·dē sō′bEtālasE^{s}wa. Wä, g·î′l^{s}mēsē lā′xḷa lāx ^{s}wā′labEdasas sō′pa^{s}yas g·ā′la la′ē ē′t!ēd łā′tōdEq.[2]

Then again he measures three spans. Then he chops in again, starting from that place, for every time he splits off two blocks. And as soon as his chopping is deep enough, he splits it off again. And when it comes off, he measures again three spans from where he measured before. And he chops into it again; and he chops it off again when it is deep enough. He continues doing this, and does not stop chopping off until it is thus.



Wä, lē ē′t!ēd bā′ł^{s}īdxa yū′duẋ^{u}p!Enk·ē lā′xEns q!wā′q!wax·ts!ana^{s}ēx. Wä, lā′-^{s}xaē ē′t!ēd sō′bEtEndEq g·ä′g·îLElasas qaxs hë′mEnāła^{s}maē ma^{s}łp!Ena łā′tōdEq. Wä, g·î′l^{s}mēsē hë′ł^{s}abEtē sō′pa^{s}yasēxs la′ē ē′t!ēd k·!ē′wax^{s}ēdEq. Wä, g·î′l^{s}mēsē lā′wäxs la′ē ē′t!ēd bā′ł^{s}īdxa yū′duẋ^{u}-p!Enk·ē lā′xEns q!wā′q!wax·ts!āna^{s}ēx g·ä′g·îLEla lax g·ā′lē sō′pa^{s}yas. Wä, lā′^{s}xaē sō′bEtEndEq. Wä, lā′^{s}xaē łā′-tōdqēxs la′ē hë′łabEta. Wä, hē′x·sä-^{s}mēsē ǥwē′g·ilaq. Wä, ā′ł-^{s}mēsē ǥwāł sō′pâlaqēxs la′ēg·a ǥwä′łēg·a.

As soon as the measuring goes straight to a branch, then he chops close along the right-hand side of it, for the canoe-builder stands on the right-hand side of the cedar, when he stands at the butt end, facing the top end. (That is where he stands — by its side, the right-hand side — when he is chopping, for all the Indians use the

Wä, g·î′l^{s}mēsē ^{s}nEqē′da ^{s}mE′nsaLElōda^{s}yas lā′xa L!Enā′k·ē, wä, sō′p!ēdEx mag·î′nwa^{s}yas lāx hë′łk·!ōdEnwa^{s}yas yîxs ḷâ′saēda Lē′q!ēnoxwē lāx hë′łk·!ōt!Ena^{s}yasa wî′lkwaxs ḷâ′saēda Lē′q!ēnoxwē lāx ō′xḷa^{s}yas ǥwē′ǥEmāła lā′xa ō′xtâ^{s}ē. (Wä, hê′^{s}mis ḷaō′xk·!ōt!Ena^{s}yaatsē hë′łk·!ōt!Ena^{s}yasēxs la′ē sō′pa, qaxs ^{s}nā′ẋwa^{s}maēda bā′k!umē hë′łk·!ō-

[1] That is, towards the middle of the canoe from the end of the curved surface of the bow-piece.

[2] That is, he cuts down at this place until the curve of the bow is continued towards the middle.

right hand when chopping. He begins to chop at the same [right] side of the branch at the thin top end of the cedar.)

As soon as what he chops is four fingers deep, — at his new chopping, — then he splits off both sides of the knot to start (the direction) of the splitting. When the splitting reaches the line of the bark, he splits it off under the knot. And at once it comes off, and the block falls on its back.

Now the whole branch-side of the cedar is off. Then a cedar-bark rope is taken by the canoe-builder, for he wants to measure the middle of the bow of the canoe he is building and the middle of the stern, for it is in this way, (for I have turned it over in the drawing, so that you can see how the rope is stretched from the bow right through to the stern; but when the little canoe is upright it is this way.)

Then he marks the place where the rope is stretched from the bow to the stern. As soon as he has finished marking it, he takes off the measuring-rope. Then he measures, beginning at the outer end of the thick end, and at (the distance of) half a fathom he chops into it, in this manner. Then he narrows to a point [squeezes] the bow. As soon as he has finished bringing down to a point the left-hand side of the bow, then he also brings down to a point the right-hand side, and he does the same to it. After he has done so, he goes to the stern. Then he measures half a fathom from the outer end of

tāłaxs sō'paē. Wä, la hë sō'plētsōsē gwēnâ'ˢyasa ʟ!ENā'k·ē lā'xa wīłETâ'ˢyasa wî'lkwē).

Wä, g·î'lˢmēsē la mō'DENBETē sō'BETENDaˢyas lā'xēs ā'łē sō'paˢ'ya la'ē k·!EwāxˢĭDEx wā'x·sanâˢyasa ʟ!ENā'k·ē qaˢmaā'tsē xō'ẋˢwīDLa. Wä, g·î'lˢmēsē la lā'g·aē k·!ē'waqaˢyas lax awu'nxaˢyasa ts!a'k·EMsē la'ē k·!ē'waq!EXḶENDxa ʟ!Enā'k·ē. Wä, lē hë'x·ˢidaEM â'EM nāˢ'ˢnak!waxḶa, NELELE'lē TE'mkwaˢyas.

Wä, laˢmē ˢwī'lâwē ʟ!E'nk·lōt!Ena yîsa wî'lkwē. Wä, hëˢ'ˢmis lā axˢē'tsōsa LĒ'q!ēnoxwēs ˢmE'nyayuwē DE'NSEN DENE'ma, qaxs hëˢ'ˢmaē ˢmE'NSElasēxa ˢNE'gEXSLasa ō'g·iwaˢyasēs LĒ'qaseˢwē Ḷōˢ ˢNEgEXSḶasa ō'xḶaˢ qaxs g·aˢē la gwä'łēda wî'lkwēg·a, (yîxs qō'qwałēgˢ·l·!latēk· qaˢs dō'qwałaōsax gwä'łaasasa DENE'maxs la'ē dō'ẋˢwaLElōdayu lāx ō'g·iwaˢyas la hë'bENdāla lāx ō'xḶaˢyas, lā'Ḷaqēxs hë'nałaēda ẋwā'ẋwagumLē g·a gwä'łēg·a).

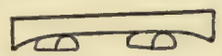
Wä, lē xu'lt!lēdEx x·ĭ'mā'łaasasa DENE'mē lā'xa ō'g·iwaˢē ḶEˢwa ō'xḶaˢē. Wä, g·î'lˢmēsē gwā'łē mā'małtlēk·!aˢyasēxs la'ē lā'wiyōdxēs ˢmE'nyayowē DENE'ma. Wä, lē bā'łˢīdxa g·ä'g·îLela lāx mā'x·baˢyasa Ḷō'ẋbaˢē. Wä, la ē'SEG·iyuwē bā'LaˢyasēXS la'ē sō'BETENDEq, g·a gwä'łēg·a. Wä, laEM q!wē'sax ō'g·iwaˢyas. Wä, g·î'lˢmēsē gwāł q!wē'saxa gE'mxōDEG·īwaˢyaxs la'ē ō'gwaqa q!wē'sˢīdxa hë'łk·!ōDEG·īwaˢē. Wä, hë'Emˢxaē gwē'x·ˢīDEq. Wä, g·î'lˢmēsē gwā'łEXS la'ē lā'xa ō'xḶaˢē. Wä, lā'ˢxaē bā'łˢīdxa ē'SEG·îyuwē g·ä'g·îLela lā'xa mā'x·baˢyasa wī'łETâˢē. Wä, lā'ˢxaē sō'BETENDEq. Wä, g·î'lˢn·ēsē hë'łaBEtaxs la'ē

the thin end, and he chops into it. As soon as he gets in far enough, he brings it to a point. And after he has done so, he goes to the opposite side of the stern and does the same to it. As soon as both ends have been brought to a point, the canoe-builder tries to make both sides alike, from end to end of the canoe that is being built.

q!wē'sᵋēdEq. Wä, g·î'lᵋmēsē gwā'łExs la'ē lā'k·!ōt!ExḷEnda. Wä, la hë'Emᵋxat! gwē'x·ᵋīdEq. Wä, g·î'lᵋmēsē ᵋnā'ẋwa la q!wē'dzEkwē wā'x·sbaᵋyasēxs la'ēda lē'-q!ēnoxwē nā'ᵋnamax·îyax ō'gwägaᵋyas lā'g·aa lāx wâ'x·sbaᵋyasēs lē'qasEᵋwē.

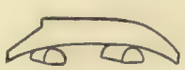
As soon as he has done this, he puts one wedged piece of fire-wood on the ground near to the side of the bow of the canoe; and he also puts another one near the stern. Then he turns over the canoe that he is making, so that it lies bottom up on them, in this manner:

Wä, g·î'lᵋmēsē gwā'łExs la'ē k·ā'-t!Elsxa ᵋnE'mts!aqē lE'mg·Ekᵘ lEqwa' lā'xa ᵋnEẋwā'ła lāx ōnō'dzaᵋyasa ō'g·i-waᵋē; wä, hë'ᵋmisa ᵋnE'mts!aqē lāx ō'xḷaᵋyas. Wä, lē qEp!E'ntsēs lE'qa lāq qa qEpā'łēs; g·a gwä'łēg·a.



Then he measures one fathom and one span and a half, and he chops into the thick end of the cedar (at the bottom of the canoe). The chopping reaches in to the depth of four finger-widths. When the chopping at the bow goes in deep enough, he chops off (the wood) at the under side of the "chin." As soon as all under the chin is off, he goes to the stern and chops off under the stern, until he reaches the stern end. As soon as it is all off, it is this way:

Wä, laE'm bā'łᵋīdxa ᵋnE'mp!Enk·ē lā'xEns bā'łax. Wä, hë'ᵋmisa ᵋnE'mp!Enk·ē lā'xEns q!wā'q!wax·ts!ānaᵋēx ē'sEg·iwēᵋsēxs la'ē sō'bEtEndxa l!Ekumaᵋyasa wî'lkwē. Wä, lē mō'dEnbāla lā'xEns q!wā'q!wax·ts!ānaᵋēx ᵋwā'labEdasas sō'paᵋyasa. Wä, laᵋmē hë'łᵋabEtē sō'paᵋyax lāx ō'xawaᵋyas. Wä, lē sō'-pâlax awā'bâᵋyasa awā'bōsx·äᵋē. Wä, g·î'lᵋmēsē ᵋwī'lâwē awā'bâᵋyasa awā'-bōsx·äᵋē, yîxs la'ē ō'xḷaᵋē lē sō'pâlax awā'bōxl!Exḷaᵋyas, lā'gᵋaa lā'xa ō'xḷaᵋē. Wä, g·î'lᵋmēsē ᵋwī'lâxs la'ē g·a gwä'łēg·a:



Then he chops off the sides so that there are no lumps and so that they are flat, — thus: **V**, — up to the bow, beginning at the hole in the middle where the mast-thwart is to stand.

As soon as it has all been chopped off, he goes to the opposite side and tries to chop it off in the same way, so that it is like the other side. As soon as they are alike, he goes to the

Wä, lē sō'pâlax ō'nuLEmaᵋyas qa k·!ē'sēs bō'łała qa â'ᵋmēs tsā'qEmg·aElsa g·a gwä'łēg·a: **V**, lā'g·aa lā'xa â'g·iwaᵋē, g·ä'g·îLEla lax axᵋā'sLasa kwa'ᵋwôyō, yîx ḷaa'stsē l!ā'p!ēqē.

Wä, g·î'lᵋmēsē ᵋwī'lâwē sō'pasEᵋwasēxs la'ē lā'k·!ōdEg·iyōd qaᵋs nā'ᵋnamax·îyēq sō'pâlaq qa ᵋnEmā'x·îsēs ḷEᵋwa apsō'dEg·iwaᵋē. Wä, g·î'lᵋmēsē la ᵋnEmā'x·îsExs la'ē lā'xḷEnd qaᵋs ō'gwaqē

stern and chops it also, so that its sides are straight, — thus: V, — beginning at the stern, and down to the place of the harpoon. As soon as this has been done, he goes to the other side and tries to do it also the same way as (the other) was chopped before.

As soon as they are alike, he stops chopping them. Then he chops off also the bark on both sides of the cedar, so that it comes off. As soon as it is all off, he looks for crooked places on the cedar, for it may be bent. That is what it is tried to chop off entirely. As soon as it is right all around, he chops off all the sap so that it comes off. Then the form in which it is makes it clear that it is to be a canoe. Then he puts it down flat, so that it is open (right-side up) on the ground.

Then he chops a thin hemlock-tree to support the sides of the canoe he is making. And he also supports the sides of the stern with chopped hemlock sticks, so that it does not shake when he cuts out the blocks from the inside.

As soon as he has done so, he measures one fathom and a half from the bow of the canoe, and he chops blocks out, this way:

As soon as the blocks that he is chopping are deep, then he chops slanting down (parallel with the sides of the canoe), beginning at the bow (1). He goes all the way along inside slanting down along the inside. As soon as he has everything off slanting downward, he goes to the stern. Then also he measures one fathom and a half, and he chops out blocks (2). As

sō'p!ēdEq qa tsaqEmg·aE'lsēs g·axat! gwä'łēg·a: V, g·ä'g·îLEla lā'xa ō'xḶa^{s}ē g·ā'xaLEla lā'xa sEg·Exdze'm. Wä, g·î'l^{s}mēsē gwā'łExs la'ē lā'k·!ōt!ExḶend qa^{s}s ō'gwaqē nā'^{s}naxts!E^{s}waxēs g·ā'lē sō'p!ētsE^{s}wa.

Wä, g·î'l^{s}mēsē la ^{s}nEmā'x·îsExs la'ē gwāł sō'paq. Wä, la ē't!ēd sō'pâlaxa ts!ā'qEmsē lāx wā'x·sanōdza^{s}yasa wî'lkwē qa ^{s}wîlâ'wēsē. Wä, g·î'l^{s}mēsē ^{s}wî'lâxs la'ē dō'qwałax qō'łełāsasa wî'lkwē, yîxs wā'k·ałaē. Wä, hë'^{s}mis la ^{s}wā'^{s}wîlaasōs sōpâ'lasōsē. Wä, g·î'l^{s}mēsē ^{s}nā'qē^{s}staxs la'ē ^{s}wā'^{s}wîlaa sō'pâlax xō'dzē̱g·a^{s}yas qa ^{s}wî^{s}lâ'wisē. Wä, laE'm awu'lx·Es^{s}Em lā x̱wā'k!unāLa lā'xēs gwē'sgEmasa. Wä, lē t!ā'x·^{s}îdEq qa ha'ng·aElsēs.

Wä, laE'm sō'p!ēdxa wî'łē q!wā'xasa qa^{s}s qē'qEdEnōLEmdēs lāx ēwanū'LEma-^{s}yasēs Lē'qasE^{s}wē. Wä, lā'^{s}xaē qē'qEdEnūL!ExḶendEq yîsa sō'psaakwē q!wā'xasa qa k·!ē'sēs nEłE'la qō tE'mgułExslax·^{s}îdLEq.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē bā'ł^{s}îdxa ē'sEg·a^{s}yâsa ^{s}nEq!Ebō'dē g·ä'g·îLEla lāx â'g·iwa^{s}yasa x̱wā'k!unäxs la'ē tE'mx̱^{s}wîdEq g·a gwä'łēg·a:

Wä, g·î'l^{s}mēsē la wu'ngEg·îlē tE'mkwa^{s}yasēxs la'ē sEqwâ'lasēs sō'bayuwē lāq g·ä'g·îLEla lā'xa â'g·iwa^{s}ē (1). Wä, lē hä'xałExsEla lā'xa â'xałExsEla. Wä, g·î'l^{s}mēsē wîlâ'wēda sEqwâ'lasE^{s}wasēxs la'ē lā'xa ō'xḶa^{s}ē. Wä, lā'^{s}xaē bā'ł^{s}îdxa ē'sEg·Eyuwasa ^{s}nEq!Ebō'dē. Wä, lā'^{s}xaē

soon as the chopping-out of his blocks reaches the place of the harpoon in the canoe, he chops out in a slanting direction with his adze.

As soon as everything is off, he measures three spans at (3), and he chops it out in blocks. And when his blocks reach down too deep, he measures three more fathoms at (4). And as soon as his blocks reach again too deep, he measures again the same length as the size of those before, of the blocks, which he chopped out at (5); and also at (6), (7), to and (8). As soon as he has chopped it all, he stops. . . .

Then he takes his wedges and puts them down at the place where he is working in the house.[1] First he takes up the marking-wedge and puts it standing into the wedge-bag. Then he takes also the starter-of-the-end-of-the-inside-of-the-canoe and puts it standing into the wedge-bag. Then he takes also the lifter-of-the-end-of-the-inside-of-the-canoe and puts it standing into his wedge-bag. Then he takes also the one-like-the-lifter-of-the-end-of-the-inside-of-the-canoe and puts it standing into his wedge-bag. Then he takes also the small-lifter-of-the-end-of-the-inside-of-the-canoe and puts it standing into his wedge-bag. Then he takes also the imitation-lifter-of-the-end-of-the-inside-of-the-canoe and puts it standing into his wedge-bag. Then he takes also the crack-opener and puts it standing into the wedge-bag [of the wedges]. Then he takes his canoe-builder's hammer and puts it into the wedge-bag [of the wedges]. Now he is ready for the next morning.

tE'mx̣ˢwēdEx (2). Wä, g·î'lˢmēsē lā'g·aē tE'mkwaˢyas lā'xa sEg·Exdzemaxs la'ē sEqwâ'lasēs sō'bayuwē lāq.

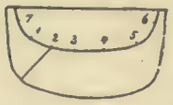
Wä, g·î'lˢmēsē ˢwī'lâxs la'ē bā'łˢīdxa yū'dux̣ᵘp!Enk·ē lā'xEns q!wā'q!wax·ts!ānaˢēx, lāx (3). Wä, lā'ˢxaē tE'mx̣ˢwīdEq. Wä, g·î'lˢmēsē aō'dzak·!âla tE'mkwaqēxs la'ē ē't!ēd bā'łˢīdxa yū'dux̣ᵘp!Enk·ē lā'xEns q!wā'q!wax·ts!ānaˢēx, lāx (4). Wä, g·î'lˢEmˢxaā'wisē aō'dzak·!âla tE'mkwaqēxs la'e wu'nqEla. Wä, lā'ˢxaē ē't!ēd bā'łˢīdxa hë'ˢmaxat! wā'sgEmē awâ'sgEmasasas g·ā'g·ili⁸ē tE'mkwaˢyaxs la'ē tE'mx̣ˢwīdEx (5). Wä, lē ē't!ēdE (6), (7), ļōˢ (8). Wä, g·î'lˢmēsē ˢwī'la la tE'mgwEkuxs la'ē gwā'ła. . . .

Wä, laˢmēs axˢē'dxēs LE'mlEmg·ayuwē qaˢs g·ā'xē LŌ'xˢwalîłas[1] lā'xēs ē'axElasē. Wä, hë'ˢmis g·îl dā'g·îlîlEmsē ma'ēłbanuwē qaˢs q!watslō'dēs lā'xa q!waa'ts!ē. Wä, lē ē't!ēd dā'g·îlîłax wīxtâlag·îłEsē qaˢs q!watslō'dēs lā'xa q!waa'ts!ē. Wä, lē ē't!ēd dā'g·îlîłax wīxtâlag·îłEsa qaˢs q!watslō'dēs lā'xa q!waa'ts!ē. Wä, lē ē't!ēd dā'g·îlîłax wīxtō'łExsē qaˢs q!watslō'dēs lā'xa q!waa'ts!ē. Wä, lē ē't!ēd dā'g·îlîłax wā'wīxtōłExsenâ qaˢs q!watslō'dēs lā'xa q!waa'ts!ē. Wä, lē dā'g·îlîłax wā'wīxtōdzama qaˢs q!watslō'dēs lā'xa q!waa'ts!ē. Wä, lē ē't!ēd dā'g·îlîłax wīxtō'łExsbōła qaˢs q!watslō'dēs lā'xa q!waā'ts!ē. Wä, lē ē't!ēd dā'g·îlîłax axā'yowē qaˢs q!watslō'dēs lā'xa q!waā'ts!äsa LEmlE'mg·ayuwē. Wä, lē axˢē'dxēs Lē'xsaˢyasē pE'lpElqa qaˢs ˢmEx̣ᵘts!ō'dēs q!waa'ts!äsa LEmlE'mg·ayuwē. Wä, laE'm gwā'łāła qaē'da lā'La ˢnā'x·ˢīdEL.

[1] It has been described before how he makes the wedges.

As soon as it gets day he arises. He only takes his breakfast and carries his wedge-bag on his back, and he goes carrying his canoe-builder's adze in one hand. As soon as he arrives at the canoe that he is making, he puts the wedge-bag down from his back, he takes out his wedges and puts them down. They are always in their proper order, from the first to the seventh.

Then he takes out his canoe-builder's hammer, carries it and puts it into the canoe that is being built. Then he takes the marking-wedge and the second one and the others and places them in the canoe that he is making. He takes the marking-wedge and marks around the block that he has chopped out at the stern. He drives (the wedge) with his hammer. He drives it in twice only, then he pulls it out and puts on again the marking-wedge at the end of the place that is now cracked. Then he drives it in again twice and pulls it out again. He only stops doing this when he has gone around his work, thus:



Then he takes the seventh (wedge) and drives it in. And he takes the others and drives them in. As soon as all the wedges have been put on, he drives in each once with his canoe-builder's hammer. Thus the blocks of cedar-wood in the canoe begin to crack all at once. ("Blocks of cedar-wood in the canoe" is the name of the blocks that are wedged off in the canoe that is being made by the canoe-builder.) As soon as the block of cedar-wood in the canoe[1] is off, then he does the same to the next one. He goes on

Wä, g·î'l^{s}mēsē la ^{s}nā'x·^{s}īdxa gaā'läxs la'ē ḷā'x^{s}wīda. Wä, â'^{s}mēsē gaā'xstalax·^{s}īda. Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē ō'xLEx·^{s}īdxēs q!waa'ts!äxs la'ē qā's^{s}īda dā'k·!ōtELaxēs LE'xsa^{s}yasē sō'bayâ. Wä, g·î'l^{s}mēsē lā'g·aa lā'xēs LE'qäxs la'ē ō'xLEg·aEIsxēs q!waa'ts!äxs la'ē axwułts!â'laxēs LEmlE'mg·ayuwē qa^{s}s LEx^{s}wE'lsELēq. Hë'x·säEm lēs gwē'gwägawayaasē lāx 1–7.

Wä, lē axwułts!ō'dxēs LE'xsayasē pE'lpElqa qa^{s}s lē dā'laq qa^{s}s lē ^{s}mEx^{s}wułE'xsas lā'xēs LE'qasE^{s}wē. Wä, la ax^{s}ē'dxa maē'ɬbanō LE'mg·ayo ḷō^{s} (2). Wä, hë'^{s}misēs waō'kwē qa^{s}s lē LŌ'x^{s}wułExsas lā'xēs LE'qasE^{s}wē. Wä, lē dā'x·^{s}īdxa maē'ɬbanō qa^{s}s maē'ɬbEndēs lā'xa tE'mkwa^{s}ē lā'xa ō'xLa^{s}ē. Wä, la^{s}mē dEgutō'tsēs pE'lpElqē lāq. Wä, â'^{s}mēsē maē'małp!Ena dEgutō'dqēxs la'ē lē'x^{s}wīdEq qa^{s}s ẋwē'laqē axbE'ntsa maē'ɬbanowē lāx ō'ba^{s}yasa la xō'ẋ^{s}wīda. Wä, lā'^{s}xaē ma^{s}ɬp!Enxtō'dEm dEx^{s}wī'dqēxs la'ē ẋwē'laqa lē'x^{s}wīdEq. Wä, ā'ɬ^{s}mēsē gwāɬ hë gwē'g·iläxs la'ē lä'^{s}stē axa'^{s}yas, g·a gwä'ɬēg·a.

Wä, lē dax·^{s}ī'dEx (7) qa^{s}s dEx^{s}wī'dēs. Wä, lē ē'tlēd dax·^{s}ī'dEx waō'kwē qa^{s}s dEx^{s}wī'dēs. Wä, g·î'l^{s}mēsē ^{s}wīlg·aaLElēda LEmlE'mg·ayâxs la'ē ^{s}nā'ɬ^{s}nEmp!Enxtōdāla dEqwā'naqElasēs LE'xsayasē pE'lpElq lāq. Wä, hë'^{s}mis lā'g·iłas nEma^{s}nā'kula xō^{s}nā'kulēda k!wā'gEłExsasE^{s}was. (Wä, hë'Em ḷē'gadEs k!wā'gEłExsēda la LE'mg·EłExsxēs tE'mkwa^{s}yaxs LE'qasE^{s}waēda ẋwā'k!unäsa LE'qlēnoxwē.) Wä, g·î'l^{s}mēsē lā'^{s}wāē k!wā'gEłExsasE^{s}wasēxs[1] la'ē ē'tlēd hë

[1] That is, the second block from the stern.

this way to the end of the canoe that he is building.

As soon as all the blocks of cedar-wood in the canoe are off, he begins again to chop out blocks as before. As soon as he thinks that the thickness is four finger-widths, he stops chopping it. And he chops it again, all in blocks of the same number as in his first chopping.

As soon as it has all been chopped into blocks, he takes his wedges again, and he only puts them in as he did before when he split out the blocks of cedar-wood in the canoe that he is building. Then the canoe that the canoe-builder is building has the name "rough canoe" in the state in which it then is.

Then the canoe-builder takes his adze and makes a trail for the roadway of the canoe that he is making. He cuts thin young cedars and hemlock-trees and lays them down crossways over the trail. Two fathoms is the distance of the young cedars. As soon as they reach down to the beach, he hires young men to push out the canoe he is building. The young men follow him at once. The stern of the canoe always goes out first, so that it goes backward when it is pushed out.

As soon as they arrive where the rough canoe stands, the canoe-builder at once takes cedar wood and splits it (into pieces) three finger-widths square. Their length is the width of the rough canoe. He shaves them round on the back, and not round on one side. Three of these are made. Then he twists six cedar-withes. He takes his largest round drill, carries one of the shaved

gwē'x·ˢīdxa mā'k·îläq. Wä, lē hē'bEndālaxēs LE'qasEˢwē.

Wä, g·î'lˢmēsē ˢwī'lâwē k!wā'gEłExsasEˢwasēxs la'ē ē't!ēd ˢnEqE'mg·îltâ tE'mkwaq. Wä, g·î'lˢmēsē k·ō'taq la mō'dEn lā'xEns q!wā'qwax·ts!ānaˢēx, yîx wâgwasasēxs la'ē gwāł tE'mkwaq. Wä, lā'ˢxaē ˢwī'laEm tE'mgułExsax wā'xaasasēs g·ā'lē tE'mkwaˢya.

Wä, g·î'lˢmēsē la ˢwī'la tE'mgEkuxs la'ē ē't!ēd axˢē'dxēs LEmlE'mg·ayuwē qaˢs â'ˢmēˢxat! ˢnEqEmg·îltowēxēs g·ā'la gwē'g·ilasExs lä'x·dē k!wā'gEłExsa. Wä, g·î'lˢmēsē ˢwilgElExsa k!wā'gEg·ēx·däsēs LE'qasEˢwē, wä, laE'm ḷē'gadēda LE'qasEˢwasa LE'q!ēnoxwas xEts!a'ēˢ lā'xēs la walâ'łaasa.

Wä, la axˢē'dēda LE'q!ēnoxwaxēs sō'bayuwē qaˢs t!Ex·î'lē qa g·ä'magasłtsēs LE'qaˢē. Wä, laE'm sō'paxa wī'swułē dzEseqwa' ḷEˢwa q!wā'xasē qaˢ gēg·aE'lsElēs lā'xa t!êx·î'la. Maē'maˢl-p!Enk·ē awâ'lag·ōldzasas dzEseqwē' lā'xEns bā'Lax. Wä, g·î'lˢmēsē lā'xstalīs lā'xa L!Emā'isaxs la'ē hē'laxa haˢyā'łˢa qaˢs wīˢxwułt!alōdxēs LE'qaˢē. Wä, hë'x·ˢidaˢmēsa haˢyā'łˢa la lā'g·ēq. Wä, hë'mEnāłaˢmēsa ō'xḷaˢyasa ẋwā'k!una hë g·ā'lag·iwaˢē qaˢs k·!laẋˢwułt!alēxs la'ē wē'qwasEˢwa.

Wä, g·î'lˢmēsē lā'g·aa lāx ha'ndzasasa xEts!a'ēˢ ẋwā'k!unaxs la'ē hë'x·ˢidaˢma LE'q!ēnoxwē axˢē'dxa k!waxLā'wē qaˢs xō'ẋˢwīdēxa yaˢyiyū'duẋᵘdEnē lā'xEns q!wā'q!wax·ts!ānaˢēx k·!EwE'lẋuna. Wä, lē hë'Em wā'sgEmē wā'dzEgEg·aasasa xEts!a'ˢē ẋwā'k!una. Wä, lē k!ā'xˢwīdEq qa lēnē'g·ēs. Wä, lē k·!ēs lē'x·Enē apsō't!EnaˢyaS. Wä, la yū'duẋᵘts!aqē axā'ˢyas. Wä, lē sE'lp!ēdxa

cedar sticks and puts it across just where the mast is going to be. And he drills a hole in the side of the bow of the canoe. And he also drills two holes at each end (of the stick). Then he sews the ends to the sides of the canoe. Now it has the name "shoving-stick of bow of canoe." And he does the same to the second one, the "shoving-stick of the middle of the canoe," and to the third one, the "shoving-stick of the stern of the canoe."

As soon as this has been done, two young men go, one to each end of the shoving-stick of the bow of the canoe, and take hold of it. And two young men go, one to each end of the shoving-stick of the middle of the canoe, and take hold of it. And two young men go, one to each end of the shoving-stick of the stern of the canoe, and take hold of it. Then the canoe-builder pushes at the bow of the canoe.

It does not take long until they get it down to the beach. Then the canoe-builder goes aboard the rough canoe which is now floating, and punts it along towards the beach of his house. Immediately he hauls up the rough canoe and puts it in front of his house on the beach out of reach of the spring-tides.

Then he takes two blocks of firewood, not very thick, and places (one) crosswise on one side (of the canoe). It is to be the crosspiece under the bow of the rough canoe. And he places the other crosswise under the stern.

As soon as this is done, he turns

q!ɛL!ɛts!aqē dɛwē'xa. Wä, lē ax^{s}ē'dxēs ɫɛ'kwē sɛlɛ'ma qa^{s}s lē dā'laxa ^{s}nɛ'mts!aqē lā'xa k·lō'kwē k!waxlā'wa qa^{s}s lē k·at!ē'ts lāx ^{s}nɛqɛlä's ax^{s}ā'sLasa yā'wap!ēxLasa ẋwā'k!una. Wä, lē sɛ'lx·^{s}īdɛx ō'gwaga^{s}yasa â'g·iwa^{s}yasa ẋwā'k!una. Wä, lā'^{s}xaē sɛ'lx·^{s}īdxa ma^{s}łts!a'qē lāx wā'x·sba^{s}yas. Wä, lē mē'mɛlxbɛndɛq lāx ō'gwäga^{s}yasa ẋwā'k!una. Wä, laɛ'm ɫē'gadɛs wī'gwadzɛg·iwēxa ẋwā'k!una. Wä, lē hë'ɛm^{s}xat! gwē'x·^{s}īdɛx wī'gwadzōyɛwa^{s}ēxa ẋwā'k!una; lē hë'ɛm^{s}xat! gwē'x·^{s}īdɛx wī'gwats!ɛxɫēxa ẋwā'k!una.

Wä, g·ī'l^{s}mēsē gwā'łɛxs laē'da ma^{s}lō'kwē ha^{s}yā'ł^{s}a wā'x·sbɛndxa wē'gwadzɛg·iwēxa ẋwā'k!una dā'łaq. Wä, lē'da ma^{s}lō'kwē ha^{s}yā'ła wā'x·sbɛndxa wī'gwadzōyɛwayēxa ẋwā'k!una dā'łaq. Wä, lē'da ma^{s}lō'kwē ha^{s}yā'ł^{s}a wā'x·sbɛndxa wī'gwats!ɛxɫēxa ẋwā'k!una dā'łaq. Wä, lē'da lē'q!ēnoxwē wē'q!ug·īwēx â'g·iwa^{s}yasa ẋwā'k!una. Wä, la'x·da^{s}xwēda q!aL!â'kwē ha^{s}yā'ł^{s}a nē'xaxs lā'aɫał wē'q!ug·īwa^{s}ya lē'q!ēnoxwē.

Wä, k·lē'st!a gē'x·^{s}īdɛxs la'ē lā'xstalīsa lā'xa L!ɛmā'isē. Wä, lē lā'xsa lē'q!ēnoxwē lā'xa xɛts!a'^{s}ē ẋwā'k!unaxs la'ē hanwä'la qa^{s}s le tēnâ'ēsɛlas lā'laas lāx L!ɛma'isasēs g·ō'kwē. Wä, hë'x·^{s}ida^{s}mēsē wā'twusdēsxa xɛts!a'ē ẋwā'k!una qa^{s}s ha'ng·alīsēs lāx ^{s}nɛqɛnts!ē'sas L!ɛmā'isasēs g·ō'kwē lāx wē'g·aaasasa ^{s}wā'lasē yîxwa'.

Wä, lē ax^{s}ē'dxa ma^{s}łts!ā'qē tɛ'mg·îk^{u} lɛqwa' xa k·lē'sē â'laɛm ɫɛsɫɛkwa'. Wä, lē gēg·ā'lisaq lāx apsā'xdza^{s}yas. Laɛ'm ẋwā'łɛg·īwēlē lāx awā'bâ^{s}yas â'g·īwa^{s}yasa xɛts!a'^{s}ē ẋwā'k!una. Wä, lē ē'tlēd ẋwā'łalēsasa ^{s}nɛ'mts!aqē lāx ẋu'lxɫē.

Wä, g·ī'l^{s}mēsē gwā'łɛxs la'ē qɛp!ɛ'n-

over the unfinished canoe and places it upside down on them. When this is done, he takes his adze and adzes (23) the "under-chin" (Fig. 61) until it is straight to (24) the neck. And he adzes also (25) the water-cutter. As soon as this is done, he goes to (8) the stern and adzes it, beginning at (33) "under the stern," to (8) the stern. When it is straight, he stops adzing it and begins to adze (35) the side of the stern and (10) the side near the stern. As soon as both sides are alike, he goes again to (22) the bow and adzes (37) the side of the bow, so that there are no irregularities on it, up to the bow and to (27) the stern end of the water-cutter.

As soon as this is done, he goes to the other side of the bow and adzes it, so that it is like the opposite side. When this is done, he begins at the water-cutter and adzes along under (29) the bottom of the canoe, making it straight all along to the lower part of (39) the "turning-out of the stern." When it is straight beginning at the water-cutter and as far as the lower part of the turning-out of the stern, he puts away his adze and takes his long-handled adze,[1] the large one for two hands, when he adzes.

Then he adzes across the grain of the cedar at (27) the stern end of the water-cutter. Then his adzing is in grooves. Now the canoe-builder adzes off all the sap, so that the canoe has a rounded bottom. He reaches (42) the place cut away under the bow of the harpooneer's canoe at (15) the tsa xɛts!a′ˢē ẋwā′k!una lāq, qa qɛp!ɛna′-ēsēq. Wä, g·ī′l′mēsē gwā′łɛxs la′ē ax′ē′dxēs sō′bayuwē qa′s sō′p!ēdēx (23) awā′bōsx·a′ē qa ˢnɛqɛ′lēs lā′g·aa lāx (24) ō′xawē′. Wä, lā′x′aē sō′paxōdɛx (25) k·!ē′gɛmē. Wä, g·ī′l′mēsē gwā′łɛxs la′ē lā′xɬɛnd lā′xa (8) ō′xɬa′ē qa′s sō′p!ēdēq g·ä′g·îlɛla lā′xa (33) awā′bō-L!ɛxɬē, lā′g·aa lā′xa ō′xɬa′ē. Wä, g·ī′l-′mēsē la ˢnɛqɛ′laxs la′ē gwāł sō′paqēxs la′ē sō′p!ēdɛx (35) ō′nuL!ɛxɬa′ē ɬɛ′wa (10) asō′t!ɛxɬa′ē. Wä, g·ī′l′mēsē la ˢnɛmā′x·îs ɬɛ′wa apsō′t!ɛxɬa′yaxs la′ē ē′t!ēd lā′xa (22) â′g·iwa′ē qa′s sō′p!ē-dēxa (37) ō′nuLɛma′ē qa k·!eâ′sēs tā′ł-tɛnsɛ′mLela lāq, lā′g·aa lā′xa â′g·iwa′ē, lā′g·aa lā′xa (27) ō′xɬa′ɬɛläsa k·!ē′gɛmē.

Wä, g·ī′l′mēsē gwā′łɛxs la′ē lā′k·!ō-dɛnūLɛmd lā′xa a′psanū′Lɛma′ē qa′s sō′p!ēdē′xaaq qa ˢnɛmā′x·îs ɬɛ′wa a′p-sanū′Lɛma′ē. Wä, g·ī′l′mēsē gwā′łɛxs la′ē g·ä′g·îlɛla lā′xa (25) k·!ē′gɛmē sō′p!ēdɛq qa′s lē hë′nā′kula sō′pax (29) awā′bâ′yasa ẋwā′k!una ˢnā′ˢnaqɛlaaq lā′g·aa lā′xa bɛ′nba′yasa (39) k·!ɛt!ɛx-ɬa′ē. Wä, g·ī′l′mēsē ˢnɛqɛ′la hë′bɛn-dāla g·ä′g·îlɛla lā′xa k·!ē′gɛmē lā′g·aa lā′xa bɛ′nba′yasa k·!ɛt!ɛxɬa′ˢyaxs la′ē g·ē′xaxēs sō′bayuwē qa′s ax′ē′dxēs qɛ′ndzayuwē,[1] yîxa ˢwā′lasē wā′x·sōł-ts!ānasōsēxs qɛ′nsaē.

Wä, lē gēgē′x·sālax k!wā′k·a′yasa k!waxLā′waxs la′ē qɛ′nsaxōdɛx (27) ō′xɬälɛläsa k·!ēgɛ′mē. Wä, la′mē t!ɛn-t!ɛ′nxɛnLɛlē qɛ′nsa′yas. Wä, la′mē′da Lē′q!ēnoxwē ˢwī′la qɛ′nsâlax xō′dzēg·a-′yas. Wä, hë′ˢmēs qa′s lē′nap!ēdēs awā′bâ′yasa ẋwā′k!una. Wä, la lā′g·aē (42) łā′ta′yasa alē′wats!ēLē ẋwā′ẋwagum

[1] This is an adze-blade attached to a handle consisting of a branch with attached part of the trunk of a tree, the latter being split off so that it has a flat surface, to which the blade is tied.

thwart behind the place where (the mast) stands. As soon as he reaches (33) the under side of the stern, he stops. Then he goes to the opposite side and tries to make his adzing the same as the adzing he has done before.

As soon as all has been adzed, he stands by the bow of the canoe and sights along it (to see) if one side of the canoe he is making is just like the other.

When it is really even, he puts away his long-handled adze and takes his hand-adze to give it the fine adzing beginning at (25) the water-cutter of the canoe straight along (29) under the bottom to (33) the under side of the stern. As soon as he comes to the end of the length of the bottom and to the end of its width, he starts adzing in the middle of the side and goes towards the bow. Then he adzes all over (37) the sides of the bow and over the bow.

As soon as he has adzed it all, he begins again in the middle, adzing towards (35) the sides of the stern, and he goes on adzing towards the stern and to the place stretching out under the stern. As soon as one side is all adzed, he goes to the other side of the canoe. And he begins to adze it at the middle, going towards the bow. When this is all adzed, he begins again in the middle and adzes towards the stern.

As soon as the outside of the canoe is adzed all over, the canoe-builder takes his thickest drill and drills forty-seven holes all over the outside of the canoe. These have the name "feelers

lāx (15) ḷEx·EgExłaxa ḷaā′sē. Wä, g·ī′l^{s}mēsē lā′g·aa lā′xa (33) awā′bōL!Exḷa^{s}yaxs la′ē gwā′ła. Wä, lē lā′xdzEnd lā′xa apsō′taxdza^{s}ē. Wä, laE′m ^{s}nā′^{s}naxts!owax gwē′x·dzasas qE′nsa^{s}yas lā′xa g·ā′lē qE′nsasō^{s}s.

Wä, g·ī′l^{s}mēsē ^{s}wī′la qE′ns^{s}ēdqēxs la′ē ḷE′x^{s}walīs lāx â′g·iwa^{s}yasa ẋwā′k!una qa^{s}s k!ulx^{s}ēdēq qō k·!ē′slax ^{s}nEmā′x·îslaxē wā′x·sadza^{s}yasa Lē′qa^{s}yas ẋwā′k!una ḷE^{s}wa apsā′xdza^{s}ē.

Wä, g·ī′l^{s}mēsē la â′lak·!āla la ^{s}nEmā′x·îsExs la g·ē′xaxēs qE′ndzayuwē. Wä, lē ax^{s}ē′dxēs k!E′mḷayuwē qa^{s}s lē a′Ek·!a k·!E′mLaq g·ä′g·îLEla lāx (25) k·!ē′gEmasa ẋwā′k!una la hē′bEndālax (29) awā′bâ^{s}yas, lā′g·aa lāx (33) awā′bōL!Exḷa^{s}yas. Wä, g·ī′l^{s}mēsē lā′bEndEx wā′sgEmasasa (29) awā′bâ^{s}yas ḷō wā′dzEwabasas la′ē g·ayō′yōdxa ō′nodza^{s}ē k·!E′mLa gwayō′łEla lā′xa ō′g·iwa^{s}ē. Wä, laEm ^{s}wī′la k!E′mł^{s}īdEx (37) ō′nūLEma^{s}ē ḷE^{s}wa (22) ō′g·iwa^{s}ē.

Wä, g·ī′l^{s}mēsē ^{s}wī′la gwāł k·!E′mLaqēxs la′ē g·ä′g·îLEla lā′xēs g·ä′g·îLE^{s}lasa ^{s}nEg·oyâ′^{s}ē qa^{s}s k·!E′mł^{s}īdē gwā′gwaaqEla lāx (35) ō′nōL!ExḷA^{s}ē. Wä, lā′g·aa^{s}mēs k·!E′mLa^{s}yas lāx ō′xḷa^{s}ē ḷō^{s} (39) k·!Et!Exḷa^{s}ē. Wä, g·ī′l^{s}mēsē ^{s}wī′la k·!E′mLaxa apsaxdzā′^{s}yaxs la′ē lā′xdzEnd lā′xa apsā′xdza^{s}yasa ẋwā′k!una. Wa, lā′^{s}xaē hë′Em g·îl k·!ī′mł^{s}ītsōsē ^{s}nEgō′yâ^{s}yas gwayō′łEla lā′xa ō′g·iwa^{s}ē, Wä, g·ī′l^{s}mēsē ^{s}wī′la la k·!E′mḶEkuxs la′ē lā′xēs g·ä′g·îLE^{s}lāsa ^{s}nEgō′yâ^{s}ē qa^{s}s k·!E′mł^{s}īdē gwayō′łEla lā′xa ō′xḷa^{s}ē.

Wä, g·ī′l^{s}mēsē ^{s}wī′lg·îltsEm la k·!E′mḶEkwē ō′sgEma^{s}yasēxs la′ē ax^{s}ē′dēda LE′q!ēnoxwaxēs ḶEkwē′ sELE′ma qa^{s}s sE′lx·^{s}īdēx ō′gwida^{s}yasa ẋwā′k!unäxa sayak·!asgEmg·ustâläsa aLEbō′dzEqē.

of the thickness of the canoe." As soon as the outside has been drilled, the canoe-builder turns the canoe over and places it on the two blocks of fire-wood.

Then he places a support of split cedar-wood on each side of the bow. And he places a support of split cedar-wood also on each side of the stern, so that it does not shake. He takes his adze and starts at the bow adzing, so that it gets a good slant down to (16) the hole in which the mast stands. Then he continues to (13) the thwart in the middle, and he stops.

Then he goes to the stern and adzes it so that it has a good slant to the bailing-hole. And he goes on trying to make his adzing straight to the middle thwart, at which he started. Then he finishes one side of the inside. Then he goes to the opposite side and does the same to it.

Now the canoe-builder is getting ready to put grooves on the inside of his canoe that is being built. He takes a thin piece of yew-wood and shaves it down to the right thickness, so that it can pass through the drill-holes on the outside of the canoe, and at a distance of two finger-widths he cuts it off. Then he measures the measure to be four finger-widths long, and he cuts it off with his knife. Then he measures one finger-width and the thickness of a finger at the other end of it, and cuts it off. This will be a measure for the bottom, the length of two finger-widths for the thickness from the bow to the bailing-hole. That (thickness of $1\frac{1}{2}$ finger-widths) will be the measure for the rounding under the

Wä, hë'EM ɬē'gadEs p!ē'x̣ulax wâ'gwasasa x̣wā'k!una. Wä, g·î'l^{s}mēsē ^{s}wī'la la sE'lkwa ō'sgEma^{s}yasēxs la'ēda LE'q!ēnoxwē t!ā'x^{s}ēdxa x̣wā'k!una qa^{s}s lēs ha'nk·!ents lā'xa ma^{s}łts!ā'qē tE'mg·îk^{u} lEqwa'.

Wä, lē qē'qEdEnūLEmtsa xō'kwē k!waxɬâ' lāx (28) ē'wanūLEma^{s}yas. Wä, la qēqEdEnūL!ExɬEnda^{s}xaasa xō'kwē k!waxɬâ lāq qa k·!ē'sēs nEłE'la. Wä, lē ax^{s}ē'dxēs sō'bayuwē. Wä, lē g·ä'g·îLEla lā'xa â'g·iwa^{s}yaxs la'ē sō'p!īda qa ë'k·ēs qElēxa^{s}nā'kulaēna^{s}yas lā'g·aa lā'xa (16) kwa'woyo ɬā'sa L!ā'p!ēqē. Wä, lē hë^{s}nā'kula lā'xa (13) ɬEx·Egō'yEwa^{s}yaxs la'ē gwā'ła.

Wä, lē' lāxa ō'xɬa^{s}ē qa^{s}s sō'p!ēdēq qa ë'k·ēs qElē'x^{s}nākulaēna^{s}yas lā'g·aa lāx ō'stEwīłExs. Wä, lē hë^{s}nā'kula ^{s}nā'^{s}naqElaaxēs sō'pasE^{s}wē lā'xēs g·ä'g·îLElasē ɬEx·Egō'yEwa^{s}ē. La^{s}mē gwā'ła apsō'täga^{s}ē. Wä, lē lā'xdzEnd lā'xa apsā'xdza^{s}ē. Wä, lā'xaē hë'Em^{s}xat! gwē'x·^{s}īdEq.

Wä, hë'^{s}maaxs la'ē xwā'nałElēda LE'q!ēnoxwē qa^{s}s t!Enxt!EnxExsēxēs LE'qasE^{s}wē. Wä, lē ax^{s}ē'dxa wī'łē L!E'mq!a qa^{s}s k·!ā'x^{s}wīdēq qa hë'adzEqElēs lāx sElā'^{s}yas lāx ō'sgEma^{s}yasa x̣wā'k!una, yî'xa ma'^{s}łdEnē lā'xEns q!wā'qwax·ts!āna^{s}yaxs la'ē qE'mt!ēdEq. Wä, lē ^{s}mE'ns^{s}īdxa ^{s}mE'nyayuwē qa mō'dEnēsē wā'sgEmasasēxs la'ē qE'mtts!EndEq yîsēs k·!ā'wayuwē. Wä, lē ^{s}mE'ns^{s}ītsa k·!ō'dEnūsEla lā'xEns q!wā'q!wax·ts!āna^{s}ēx lāx apsbā'^{s}yasēxs la'ē qE'mt!ēdEq. Wä, la^{s}mē ^{s}mE'nyayūłxa awā'bâ^{s}ya ma'^{s}łdEnas wā'sgEmasē qa wâ'gwasLEs hë'bEndāla lā'xa â'g·iwa^{s}ē lā'g·aa lā'xa ō'stEwīłExsē. Wä, lē ^{s}mE'nyayū'łxa dzē'gîxdzEmasa x̣wā'k!unē. Wä, laE'm tEk·E'lē qōgoyâyasa ^{s}mE'nyayuwē lā'xa sEla'^{s}ē lāx ō'sgEma^{s}yasa x̣wā'k!una.

canoe. The middle part of the measure cannot pass through the drill-holes on the outside of the canoe. One name of the measure is "feeler of the thickness of the canoe that is being built."

As soon as this is done, he takes another piece of yew-wood and measures three finger-widths for its length; then he cuts it off. And he makes a notch at a distance of one finger-width, and cuts into it. Then he shaves it thin enough for the distance of one finger-width, for the drill-holes on the side of the canoe. That is to be the measure for the side of the canoe, for the canoes made by the canoe-builders have three (measures for the) thickness (in different parts).

As soon as his measures are done, he takes his large two-handed adze, and also the two measures, and goes into the bow of the canoe. Then he adzes the inside of the bow across the grain, and adzes the length of one short span, beginning at the bow, along the inside of the bow.

As soon as he comes to a drill-hole with his adzing, he pushes his shortest measure into the drill-hole, and he puts his first-finger against the hole from the outside at the place where his measure will come out. As soon as he feels its point, he stops adzing. And one finger-width is the thickness at the line marked (Fig. 63, above, 1). And one finger-width and a half is the thickness at (15), the whole length of the canoe.

Hë'EM sNEM ḷē'gEmsa sME'nyayuwē p!ē'wayux wâ'gwasasa LĒ'qāsEswē ẋwā'k!una.

Wä, g·î'lsmēsē gwā'łExs la'ē ē't!ēd axsē'dxa ō'guslē L!E'mq!a qas smE'nsidēxa yū'duẋudEnas wā'sgEmasē lā'xEns q!wā'q!wax·ts!ānasyaxs la'ē qE'mtts!EndEq. Wä, lē qE'mdaLElōdxa snE'mdEnē lā'xEns q!wā'q!wax·ts!ānasyaxs la'ē qE'mtlīdEq. Wä, lē k·!axswī'dEq qa hë'adzEqElēsa snE'mdEnē lā'xEns q!wā'q!wax·ts!ānasēx lāx sElā'syas awā'nudzasyasa ẋwā'k!una. Wä, hë'EM sME'nyayūłxa awā'nudza'yasa ẋwā'k!una qaxs yū'duẋswīdałaē wâ'gwasasa ẋwā'ẋuk!unäxs LĒ'qasEswaasa LĒ'Elq!ēnoxwē.

Wä, g·î'lsmēsē gwā'ła smē'sMEnyayâxs la'ē dā'laxēs swā'lasē wā'x·sōłts!ānasō qE'ndzayu. Wä, lē dā'laEmsxaaxēs masłts!a'qē smē'sMEnyayâ qas lē lāxs lāx ō'g·iwasyasa ẋwā'k!una. Wä, gEgēx·ssālaxa k!wa'qasyasa ō'ts!ōłg·iwasyasa ẋwā'k!unaxs la'ē qE'nssīdEq snE'mp!Enk· lā'xEns ts!oẋuts!a'nayaqē wā'sgEmstōwasas q!E'nsbEtEntsEswas g·ä'x·sīd la'xa ōgwä'gasē haxałE'xsEla lā'xa ōts!â'łg·iwasē.

Wä, g·î'lsmēsē lā'g·aa lā'xa sEla'ēs qE'nsasyasēxs la'ē L!E'nstōtsa ts!Ek!wa'gasyas sME'nyayâs lā'xa sEla'ēs. Wä, lē ts!EmsElEwēsēs ts!Emālax·ts!ānasē lā'xa sEla'sē lā'xa L!ā'sadzasyaxs la'ē L!E'nxstâyēs sME'nyayuwē. Wä, g·î'lsmēsē p!ēẋswaLE'lax ō'basyasēxs la'ē gwāł qE'nsaq. Wä, hë'EM snE'mdEn lā'xEns q!wā'q!wax·ts!ānasyaqēda (1) xu'ldEkwa (Fig. 63, above), yîx wâ'gwasas lā'bEndEx wā'sgEmg·Eg·aasasa ẋwā'k!una. Wä, la k·!ō'dEnūsEla lā'xEns q!wā'q!wax·ts!ānasēx, yîx wâ'gwasas (15)

And two finger-widths is the thickness of (28) the rounding. And the thickness of (15) the rounding is also the thickness of (39) the bottom.

As soon as it has all been grooved, for that is how it is after the adzing, he adzes off again between the drill-holes. And he adzes it off well, so that the inside becomes smooth. As soon as this is done, he puts away his (long-handled) adze and takes his hand-adze.

Then he first adzes (38) the straight line (Fig. 63, below). Its width is four finger-widths. He starts at (18) the nape of the neck and adzes it. As soon as he comes to the middle, he stops and goes to the stern and adzes it. The width of his adzing is again four finger-widths. He goes straight on to where he stopped in the middle of the canoe.

As soon as one side is done, he does the same to the other side. When the straight line (38) has been finished, he begins to adze it from (41) the inside of the bow at the edge under the straight line. He goes straight on to the middle of the canoe.

As soon as this is done, he goes to the stern, and he adzes it going to the middle of the canoe to where he stopped before. As soon as he comes to the place that he has adzed well, he stops, for one side has been adzed to the middle of the bottom of the canoe; and he does the same to the other side.

hë'bEndāla lāx wā'sgEmg·Eg·aasasa ẋwā'k!una. Wä, la mā'ᵍłdEm lā'xEns q!wā'q!wax·ts!ānaᵍēx, yîx wâ'gwasas (28) dzē'g·Exdzemē. Wä, lā'ᵍxaē hë'Em wâ'kwa (39) awā'bâᵍē wâ'gwasas (15) lāx dzē'g·Exdzemē.

Wä, g·î'lᵍmēsē la ᵍwī'la la t!Enxt!E'nxdzEkux, qaxs hë'ᵍmaē lagwä'laatsēxs la'ē gwāł qE'nsasEᵍwa. Wä, lē ē't!ēd qEnsâ'lax ē'awagaᵍwaᵍyasa sEla'ᵍē. Wä, laᵍmē aē'k·a qEnsâ'laq qa ᵍnEmā'g·aałExsēs. Wä, g·î'lᵍmēsē gwā'łExs la'ē g·ē'xaxēs qE'ndzayuwē qaᵍs axᵍē'dēxēs k·!E'mḷayuwē.

Wä, hë'ᵍmē g·îl k·!î'młᵍītsōᵍsēda (38) q!ax·q!ax·saᵍē (Fig. 63, below). Wä, laE'm mō'dEn lā'xEns q!wā'q!wax·ts!ānaᵍēx, yîx wā'dzEwasa. Wä, laᵍmē hë g·ā'yabalē (18) ō'xḷaatâᵍya la'ē k!E'młᵍīdEq. Wä, g·î'lᵍmēsē lā'g·aa lā'xa ᵍnEgō'yuwītExsē la'ē ᵍwā'la qaᵍs lē lāx ō'xḷaᵍē qaᵍs k·!E'młᵍīdēq. Wä, laE'mᵍxaē mō'dEn lā'xEns q!wā'q!wax·ts!ānaᵍēx, yîx wā'dzEwasas k·!E'mLaᵍyas. Wä, lē hëᵍnā'kulaEm lā'xēs ᵍwā'laasada ᵍnEgōyâ'ᵍyasa ẋwā'k!una.

Wä, g·î'lᵍmēsē gwā'ła apsā'xdzaᵍyaxs la'ē hë'Emᵍxat! gwē'x·ᵍīdxa apsā'xdzaᵍē. Wä, g·î'lᵍmēsē ᵍwī'la gwā'łē q!ā'x·q!axsaᵍyasēxs la'ē aë'k·a k·!E'młᵍīd g·ä'g·îLEla lā'xa (41) ō'ts!âłg·iwaᵍē lāx banE'nxaᵍyasa q!ā'x·q!axsaᵍē. Wä, laᵍmē hëᵍnā'kulaEm lā'xa ᵍnEgō'yâᵍyasa ẋwā'k!una.

Wä, g·î'lᵍmēsē gwā'łExs la'ē lā'xḷEnd lā'xa ō'xḷaᵍē. Wä, lā'xaē aē'k·!a k·!E'młᵍīdEq gwayō'łEla lā'xa ᵍnEgō'yâᵍyasa ẋwā'k!una, lā'laa lā'xēs ᵍwā'laasē. Wä, g·î'lᵍmēsē lā'g·aa lā'xa aë'k·!aakwē k·!E'mḷEkuxs la'ē gwā'ła, yîxs apsaxdza'yaᵍē k·!E'mLasEᵍwas lā'g·aa lā'xa ᵍnEgExsa'sa ẋwā'k!una. Wä, la hë'Emᵍxat! gwē'x·ᵍīdxa apsaxdza'ᵍē.

As soon as the whole inside and outside of the canoe have been adzed, he puts away his adze and takes easily-splitting cedar-wood; and he takes his straight-edged knife and splits the cedar-wood into thin square pieces. He shaves one end down so that it is sharp. The width of our hand with the thumb is the length of the split cedar-sticks; thus he cuts them off. As soon as he has forty-eight of these, he stops shaving.

Then he takes a stone, goes into the canoe, and, beginning at the inside of the bow, he takes one of the closing-pegs of split cedar, and drives it into the drill-hole. He drives them in with a stone. As soon as they have been driven in enough, he takes his straight-edged knife and cuts them off. He does this with the whole number of drill-holes.

Now the canoe-builder goes to get fire-wood to spread the canoe. As soon as he has enough fire-wood, he returns home and puts it down close to the canoe that he is going to spread. As soon as he has taken all the fire-wood out of his [fuel-gathering receptacle] canoe, he starts again, and goes to gather new stones in his [gathering-receptacle] canoe. As soon as he has gathered enough, he returns home.

Then he takes (the stones) out of his canoe and puts them down near the canoe that is to be spread. As soon as he has taken them all out, he looks (to see) if the inside of the

Wä, g·î'l^{s}mēsē ^{s}wī'la la aē'k·!aak^{u} k·!E'mLEkwa ō'xsē LE^{s}wa ō'sgEma^{s}yasa ẋwā'k!unäxs la'ē g·ē'xaxēs k·!EmLayuwē. Wä, la ax^{s}ē'dxa ë'g·aqwa k!waxLā'wa. Wä, la ax^{s}ē'dxēs ^{s}nExx·ä'ła k·!ā'wayâ. Wä, lē xōxō'x·sents lā'xa k!waxLā'wē qa wī'swułtowēs k·!ē'k·!EwElx^{s}una. Wä, lē k·!ā'x^{s}wīdxa ō'ba^{s}yas qa eē'x·bēs. Wä, la LŌ'xdEn lā'xōx wā'dzEwasasEns a^{s}yasō'x Ł^{s}wens qō'max, yîx awâ'sgEmasasa k·!ō'kwē k!waxLā'waxs lā'naẋwaē qE'mts!endEq. Wä, g·î'l^{s}mēsē sayak·!ā'sgEmsâlasa ma^{s}łgunā'łts!aqaxs la'ē gwāł k·!a'ẋwa.

Wä, la ax^{s}ē'dxa t!ē'sEmē qa^{s}s lē lāxs lā'xa ẋwā'k!una. Wä, la hë'Em g·ā'yabalēda ō'ts!âlg·iwa^{s}yaxs la'ē dā'x·^{s}îdxa ^{s}nE'mts!aqē lā'xa dEdō'xstōyō k·!âk^{u} k!waxLā'wa qa^{s}s ŁEnstō'dēs lā'xa sEla'^{s}ē. Wä, lē dē'x^{s}wītsa t!ē'sEmē lāq. Wä, g·î'l^{s}mēsē gwāł su'ẋ^{u}ts!axs dē'qwaaqēxs la'ē ax^{s}ē'dxēs ^{s}nExx·ä'ła k·!ā'wayu qa^{s}s k·!Emt!ExŁE'ndēq. Wä, la ^{s}nā'ẋwaEm hë gwē'x·^{s}îdxa sē'sEla^{s}ē lā'xēs wā'xaasē.

Wä, la^{s}mē'da LE'q!ēnoxwē la anē'qax lEqwä' qa^{s}s LEpdEmā'Lēxēs LE'qa^{s}ē. Wä, g·î'l^{s}mēsē hë'ł^{s}alē lEqwä'sēxs la'ē nä'^{s}nak^{u} lā'xēs g·ō'kwē qa^{s}s lē mōgwa'līsaq lā'xa ^{s}nExwā'ła lā'xēs LEpā'sōLē ẋwā'k!una. Wä, g·î'l^{s}mēsē ^{s}wī'lōłtâwa lEqwä' lāx anē'gats!äs ẋwā'k!unaxs la'ē ē't!ēd ŁEx^{s}ē'd qa^{s}s lē xEgu'xsElaxa ā'łExsEmē t!ē'sEma lā'xēs xEgwa'ts!ē ẋwā'k!una. Wä, g·î'l^{s}mēsē hë'ł^{s}alē xEqwa'^{s}yasēxs la'ē nä'^{s}nakwa lā'xēs g·ō'kwē.

Wä, lē xExwułtō'dEq lā'xēs ẋwā'k!una qa^{s}s lē xEx^{s}walē'sElaq lā'xa mā'k·ägaˢyax LEpā'sōLasēs LE'qa^{s}ē. Wä, g·î'l-^{s}mēsē ^{s}wī'lōłtâxs la'ē dō'qwałax qeŁēLā'lä lāx ōgwä'ga^{s}yasēs LE'qa^{s}ē. Wä,

canoe that he is making is bent inward. When he discovers a place where it is bent inward, he lays down the fire-wood for spreading the canoe close by its side.

Then he puts the fire-wood cross-wise. The fire on the beach for spreading the canoe is half a fathom long and half a fathom wide. As soon as there is enough fire-wood, he puts the stones on top. Then he lights a fire under it.

As soon as it blazes up, the canoe-builder takes easily-splitting cedar-wood and splits it into pieces. They are half a finger thick and one finger wide; and they are much longer than the width of the inside of the canoe. These are to be used for spreading the canoe when it gets warm when the hot stones are put into it.

As soon as this is done, he takes long tongs and two large buckets, and also a bailer. Then he takes also the long split cedar-wood and ties it (in a bundle tying it) in places. This will be used for burning the bottom of the outside of the canoe when the water inside begins to boil. As soon as this is done, he takes the two large buckets and draws fresh [real] water, for salt water is not good for [water inside] the canoe that is to be spread. As soon as the depth of the water in the canoe is four finger-widths, he stops pouring into it.

Now the stones are hot. Then he g·î'l^{s}mēsē dō'x^{s}waLElaxa qeḶē'LāłäxS la'ē hë'Em k·at!alī'dzasxa x̣wā'x̣unōwī-Lasa LEpdEmā'Lē lEg̣wē'sxa x̣wā'k!una.

Wä, lē ga'yi^{s}lälaxa lEqwä'xs ē'sEg·E-yūasa ^{s}nEq!Ebō'dē lā'xEns bā'Läqē wā'sg̣Emasas LEpdEmā'Lē lEg̣wē'sa. Wä, lē ^{s}nEq!Ebō'dē wā'dzōsg̣Emasas lā'xEns bā'Lax. Wä, g·î'l^{s}mēsē hë'ł^{s}alē'da lEqwä'xs la'ē xEqu^{s}yîndā'lasa t!ē'-sEmē lāq. Wä, hë'x·^{s}ida^{s}mēsē mEna'-bōtsa gu'lta lāq.

Wä, g·î'l^{s}mēsē x·ī'k·ōstâxs la'ēda LE'q!ēnoxwē ax^{s}ē'dxa ë'g·aqwa k!wax-LA'wa qa^{s}s xō'xox̣^{u}sEndēq. Wä, lē k·!ō'dEnē wīwâ'gwasas lā'xEns q!wā'-q!wax·ts!āna^{s}ēx. Wä, ^{s}nā'ł^{s}nEmdEnē awâ'dzEwasas lā'xEns q!wā'q!wax·ts!āna^{s}ēx. Wä, lē awī'laEm g·î'lsg·îltagwēs wā'dzEg·Exdzasasa x̣wā'k!una. Hë'Em qEtElā'łtsēxa x̣wā'k!una qō lāł ts!E'lqum-sâLō qō lāł k·!Epstalā'łtsa x·ī'x·Exsemāla t!ē'sEm lāq.

Wä, g·î'l^{s}mēsē g̣wā'łExs la'ē ax^{s}ē'dxēs g·î'lt!a k·!îpLā'la; wä, hë'^{s}mēsa ma^{s}łtsE'mē awâ' naE'ngats!a; wä, hë'^{s}mēsa tsä-^{s}lā'yuwē. Wä, lā'^{s}xaē ax^{s}ē'dxa g·î'ls-gîlt!a xōk^{u} k!waxLā'wa qa^{s}s yîLEłE'n-dEq. Wä, hë'Em tsē'nābElałtsēx ō'sg̣Ema^{s}yasa x̣wā'k!una qō lāł maE'mdEl-qulaLa ^{s}wā'pē lāx ō'xsas. Wä, g·î'l-^{s}mēsē g̣wā'łExs la'ē ax^{s}ē'dxa ma^{s}łtsE'mē awâ' naE'ngats!ä qa^{s}s lē tsäs lā'xa ^{s}wī'^{s}wap!Emē, qaxs k·!ē'saē ë'k·a dE'm-sx·ē lāx ^{s}wā'paxsäsa LEpa'sE^{s}wē x̣wā'-k!una. Wä, lē gug̣E'xsElas lā'xēs LEpā'-sōLē x̣wā'k!una. Wä, g·î'l^{s}mēsē mō'dEn lā'xEns q!wā'q!ax·ts!āna^{s}ēx yîx wā'laē-dzasasa ^{s}wā'pē lā'xa x̣wā'k!unäxs la'ē g̣wāł gug̣E'xsElaq.

Wä, la^{s}mē ts!E'lx^{s}wīd, ^{s}nā'x̣wēda

takes his tongs, picks up the red-hot stones, and puts them into the canoe. As soon as the water in the little canoe boils up, he takes his bailer and goes from one end of the little canoe to the other, sprinkling the inside with the boiling water, so that the heat goes really through it. Then he lights the ends of his torch and burns the bottom of the canoe.

As soon as the body of the canoe is heated through, he takes the split cedar-sticks and spreads the inside of the canoe. That makes the canoe open, so that its back is wide.

As soon as it is wide enough, he stops spreading it. Then he takes the thwarts. The width of the mast-hole thwart is four finger-widths; but all the other thwarts have a width each of three fingers. The thickness of the split cedar-wood (for the thwarts) is one finger-width. After he has split it, he shaves it down. As soon as he finishes shaving it, he fits the end in the inside of the canoe, just under the line (38).

As soon as he has fitted them all in, he takes his thickest drill and drills one finger-width from the end of the thwart underneath it, so that it goes through the canoe, four drill-holes at each end of the thwart with the mast-hole. And he drills through the sides of the canoe above the [hole] thwart. But there are three drill-holes at the

tl!ē'sEmē. Wä, lē ax^{s}ē'dxēs k·!EpLā'la qa^{s}s k·!Epl!'dēs lā'xa x·!'x·îxsEmāla tl!ē'sEma qa^{s}s lē k·!EbE'xsElas lāx tō'xsasa ẋwā'k!una. G·î'l^{s}maē mEdElx^{s}wī'dēda ^{s}wā'pē lāx ō'xsasa ẋwā'ẋwagumaxs la'ē dā'x·^{s}īdxēs tsä'^{s}layuwē qa^{s}s la'labEndēxa ẋwā'ẋwagumē xō'sasa maE'mdElqula ^{s}wāp lāx ō'xsa qa â'lēs lā'x·sâwēda ts!E'lqwa lāq. Wä, lē mē'x·bEndxa tsē'nabayowē qa^{s}s lē tsē'nabas lāx awā'bâ^{s}yasa ẋwā'k!una.

Wä, g·î'l^{s}mēsē la ^{s}nāẋwa ts!E'lqumx·sâwē ō'gwīda^{s}yasa ẋwā'k!unäxs la'ē ax^{s}ē'dxa xō'kwē k!waxLā'wa qa^{s}s qatī^{s}lä'lēs lāx ō'gwäga^{s}yas ō'xsasa ẋwā'k!una. Wä, hë'Em la yîl^{s}nā'kulāmasxa ẋwā'k!una qa lē'xEg·ēs.

Wä, g·î'l^{s}mēsē hë'ł^{s}adzExs la'ē gwāł qatī^{s}lä'laq. Wä, lē ax^{s}ē'dxa Ļē'Ļex·exslas. Wä, la mō'dEn lā'xEns q!wā'q!wax·ts!āna^{s}ēx yîx wā'dzEwasasa kwawō'yâsa Ļaā'sē. Wä, lā'Ļa ^{s}nā'ẋwaEm yaē'yūduẋ^{u}dEn lā'xEns q!wā'q!ax·ts!āna^{s}ēx, yîx awâ'dzEwasasa waō'k^{u} Ļē'Ļex·exts. Wä, lē ^{s}nE'mdEn lā'xEns q!wā'q!wax·ts!āna^{s}ēx, yîx wī'wōgwasas yîxa pā'ts!aakwaē k!waxLā'wa. Wä, lē ā'ł^{s}Em k·!ā'x^{s}wīdqēxs la'ē gwāł pā'ts!aq. Wä, g·î'l^{s}mēsē gwāł k·!ā'xwaqēxs la'ē bE'ng·aaLElōts ō'ba^{s}yas lāx ō'gwäga^{s}yasa ẋwā'k!una lāx banE'nxa^{s}yasa q!āx·q!ā'x·sa^{s}ē.

Wä, g·î'l^{s}mēsē ^{s}wī'la lā bE'nkuxs la'ē ax^{s}ē'dxēs Ļekwē' sElE'm qa^{s}s sE'lx·^{s}īdē ^{s}nE'mdEnē lā'xEns q!wā'q!wax·ts!āna^{s}ēx g·ä'g·iLEla lā'xa ō'ba^{s}yasa Ļē'Ļex·exsē la hëx·sâ'la lāx bEnā'dza^{s}yas qa^{s}s lē hë'x·sâla lā'xa ẋwā'k!unäxa mō'dzEqē sEla'^{s}ya lāx wā'x·sba^{s}yasa kwa'wōyuwē. Wä, la sElx·^{s}ī'dEx ō'gwäga^{s}yasa ẋwā'k!una lāx ë'k·!ōt!Ena^{s}yasa kwā'woyuwē. Wä, lā'Ļa yaē'yūduẋ^{u}dzEqē sElā'^{s}yas

ends of the aft-thwarts. Then he takes twisted cedar-withes and sews the thwarts to the canoe.

As soon as this is done, he splits long (chips of) cedar-wood. Their width is two finger-widths, and their thickness one finger-width. Two of these are split. Then he takes his crooked-knife and shaves them. As soon as this is done, he puts them down one on each side of the canoe.

Then he takes red-pine wood and splits it into thin pieces of square shape. Then he takes his straight-bladed knife and shaves them to a point at one end. When the length of each of them is four finger-widths, he cuts them off. Now they are sharp at one end and thick at the top.

Then the length-strip is put on, reaching not quite to the end of the nape of the neck (18) of the canoe. He drills a hole in its end, and pegs a red-pine-wood peg into it. Then he measures two spans and drills another hole. Then he takes another pine-wood peg and drives it in, having for his hammer a stone. He goes along doing this the whole length of the canoe as far as the lower end of the stern-block (9), and the drill-holes for the pegs are all two spans apart. He does the same also on the other side.

As soon as this is done, he splits a piece of cedar-wood. When he has split it, he takes his adze and adzes

ō'ba^{s}yasa gwē'gwäłExsē ḷē'ḷEx·Exsa. Wä, la ax^{s}ē'dxa sE'lbEkwē dEwē'x qa^{s}s t!E'mg·aaLElōdēsa ḷē'ḷEx·Exsē lā'xa ẋwā'k!una.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē xō'ẋ^{s}wīdxa g·î'lsg·îlt!a k!waxLā'wa. Wä, lē ma'^{s}łdEn lā'xEns q!wā'q!wax·ts!ana^{s}ēx, yîx awâ'dzEwasas. Wä, lē ^{s}nE'mdEn lā'xEns q!wā'q!wax·ts!āna^{s}ēx, yîx wâ'gwasas. Wä, la ma^{s}łts!ā'qē xō'yas. Wä, lē ax^{s}ē'dxēs xE'lẋwā'ła k·!ā'wayâ qa^{s}s k·!ā'ẋ^{s}wīdēq. Wä, g·î'l^{s}mēsē gwā'łExs la'ē k·atē't!ēts lāx wā'x·sōtägya^{s}yasa ẋwā'k!una.

Wä, lē ax^{s}ē'dxa wunā'gułē qa^{s}s xō'xōx·sEndēq qa wī'swułtowēs k·!ē'k·!EwElẋ^{s}una. Wä, lē ax^{s}ē'dxēs ^{s}nEx·x·ä'ła k·!ā'wayâ qa^{s}s k·!ā'ẋ^{s}wīdēq qa ëë'x·bēs a'psba^{s}yas. Wä, lē maē'mōdEn lā'xEns q!wā'q!wax·ts!āna^{s}yax, yîx awâ'sgEmasasēxs la'ē k·!E'mts!EndEq. Wä, laE'm ëë'x·bē a'psba^{s}yas. Wä, lā ḷEgutōxēs ō'xtâ^{s}ē.

Wä, laE'm k·a'k·Etäga^{s}ēda k·atē'dEmē ha'lsElaEm k·!ēs lā'g·aē ō'ba^{s}yas lāx ō'xḷaatâ^{s}yasa ẋwā'k!una. Wä, lē sE'lx·^{s}īdEx ō'ba^{s}yas qa^{s}s ḷap!ē'dēsa wu'nẋ^{s}unē ḷa'bEm laq. Wä, la bā'ł^{s}īdxa ma^{s}łp!E'nk·ē lā'xEns q!wā'q!wax·ts!āna^{s}yaxs la'ē ē't!ēd sE'lx·^{s}īda. Wä, lā'^{s}xaē ē't!ēd ax^{s}ē'dxa ^{s}nE'mts!aqē wu'nẋ^{s}un ḷā'bEma. Wä, lā'^{s}xaē dē'ẋ^{u}bEtEnts lāq dē'gwayunuẋ^{u}sa t!ē'sEmē. Wä, lē hë'bEndālaEmx wā'sgEmasasa ẋwā'k!una, lā'g·aa lā'xa ō'ba^{s}yasa hEgux·ḷa'^{s}ē; wä, la^{s}mē ^{s}nā'ẋwaEm ha'młdEngâla lā'xEns q!wā'q!wax·ts!āna^{s}yaqē awâ'lagâ'łaasasa sEla'^{s}ē qaē'da ḷā'bEmē. Wä, lē hë'Em^{s}xat! gwē'x·^{s}īdxa apsaxdza'^{s}ē.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē pā'ts!Ex·^{s}īdxa k!waxLā'wē^{s}. Wä, g·î'l^{s}mēsē gwā'łē pā'ts!a^{s}yasēxs la'ē ax^{s}ē'dxēs

it on one side, so that it is smooth. After this is done, he measures one fathom and adzes it, so that one end is pointed. He measures it according to the inside of the bow of the hunting-canoe. When it fits, he puts a cross-piece at its end. Now it is the bow-seat for the inside of the bow of the hunting-canoe. He cuts a hole through it just under the hole in the thwart for the mast to go through.

As soon as this is done, he takes a piece of cedar-wood three finger-widths wide, one finger-width thick, and four finger-widths long, and he notches it in the middle, in this manner. He makes four of them, all this way. Then he drills six holes in them. These are the supports of the cross-piece at the end of the bow-seat. (The bow-seat has three names; it is also called "lying flat" and "spreader.") As soon as they are done, he puts in the bow-seat and he measures where the cross-piece stops inside the canoe. Then he takes the supports, puts them in under the cross-piece, and drills through the same holes (continuing) through the canoe. Then he takes pegs of split pine-wood and pegs them through the support. He takes a stone to hammer their tops. And he does the same to all the others.

As soon as this is done, he goes to the stern and does the same again for the stern-seat. The only difference is, that the stern-seat is shorter, the cross-piece reaching as far as under the stern-thwart.

k·!E′mɬayuwē qa^{s}s k·!EmLEldzōdēx apsā′dza^{s}yas qa ^{s}nEmā′dzowēs. Wä, lē gwā′ɬExs la′ē bā′ɬ^{s}īdxa ^{s}nE′mp!enk·ē lā′xEns bā′Lax. Wä, lē k·!E′mɬ^{s}īdEx qa wī′ɬbēs. Wä, â′naẋwa^{s}mēsē ^{s}mE′ns^{s}īts lā′xa ō′ts!âɬg·īwa^{s}yasa alē′wats!ē ẋwā′k!una. Wä, la bE′ng·aaLElaxs la′ē gē′bEndEq. Wä, laE′m Lā′dEg·īwa^{s}ya (34) lā′xa ō′ts!âɬg·īwa^{s}yasa alē′wats!ē ẋwā′k!una. Wä, lē k·!ē′x·sōdxa kwôx·sâ′wē lāx ^{s}nEgabâ′^{s}yasa kwa′woyuwē qa ɬaẋ·sâ′latsa ɬap!ē′qē.

Wä, g·î′l^{s}mēsē gwā′ɬExs la′ē ax^{s}ē′dxa yū′duẋ^{u}dEnē lā′xEn q!wā′q!wax·ts!āna^{s}ēx, yîx wā′dzEwasasa k!waxLā′wē^{s}. Wä, lē ^{s}nE′mdEnē wâ′gwasas. Wä, lē mō′dEnē wā′sgEmasas. Wä, lē qEmt!ē′dEx ^{s}nEgō′yâ^{s}yas; g·a gwä′ɬēg·a Wä, lē mō′wē axā′^{s}yas hë′x·sä gwē′x·sē. Wä, la sE′lx·^{s}ītsa q!aL!EdzE′qē lāq. Wä, laE′m maE′mguxsē qa k·ā′tdEmas gē′gēba^{s}yasa Lā′dEg·iwa^{s}ē. (Yū′duẋwē ɬē′gEmasa ɬā′dEg·īwa^{s}ē, ɬE^{s}wa pa′sk·Ena; wä, hë′^{s}misē k·!Exsō′wē.) Wä, g·î′l^{s}mēsē gwā′ɬExs la′ē ax^{s}ā′ɬExsxa Lā′dEg·īwa^{s}ē qa^{s}s ^{s}mE′ns^{s}īdēx wā′laɬaasas gebā′^{s}yas lāx ō′xsasa ẋwā′k!una. Wä, lē ax^{s}ē′dxa maE′mguxsē qa^{s}s ax^{s}ā′ɬElōdēs lāx awā′bâ^{s}yasa gē′ba^{s}yas. Wä, lē sElEmstō′dxa sē′sEla^{s}ē lāq qa hëx·sâ′lēs lā′xa ẋwā′k!una. Wä, lē ax^{s}ē′dxa wī′wunē′guɬ^{s}Enē k·!âk^{u} ɬā′bEma qa^{s}s ɬap!ā′ɬExsēsa maE′mguxsē. Wä, lē ax^{s}ē′dxa t!ē′sEmē qa^{s}s dē′x^{s}wīdēs lāx ō′xtâ^{s}yas. Wä, lē ^{s}nā′ẋwaEm hë gwē′x·^{s}īdxa waō′kwē.

Wä, g·î′l^{s}mēsē gwā′ɬExs la′ē lā′xa ō′xɬa^{s}ē. Wä, lā′^{s}xaē hë′Em^{s}xat! gwē′x·^{s}īdEq qa Lā′dEɬēs. Lē′x·a^{s}mēs ō′guqaɬayōsēxs ts!Ek!wa′ēs Lā′dEẋLa^{s}ē, yîxs hë′^{s}maē wā′laɬē gEba′^{c}yasē awā′bâ^{s}yasa ɬEx·EgE′ɬē.

As soon as this is done, he takes a block of cedar-wood and adzes it. It is to lie on the bow of the canoe. As soon as it is done, he fits it on. Then he takes his drill and drills four holes close under the neck of the canoe. As soon as this is done, he takes pine-wood pegs and pegs them in. And he drills four holes between the bow-piece and the bow of the canoe, in this manner. When this is done, he takes twisted cedar-withes and sews (the piece to the canoe) crosswise. When this is done, he cuts a groove in it for the harpoon-shaft to rest in. This is called "resting-place-of-the-harpoon-shaft-groove-in-bow-of-hunting-canoe." If it is a large travelling-canoe, it is called "resting-place of mast."

When this is done, he goes to the stern to put on the stern-block, which is pegged and sewed across in the same way. But there is no groove in the stern-piece.

There is also no protector of the water-cutter of the small-canoe, for they always shave it off, so that its rounding is sharp, so that no eel-grass may hook on to it when the harpooneer goes hunting porpoise.

Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē ax-^{s}ē'dxa tEmk·!â'yē k!waxLā'wa qa^{s}s k·!Emɬ^{s}ī'dēq. Wä, laEm ha^{s}ẋ^{u}bīɬtsa ẋwā'k!una. Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē bE'ng·aaLElōts. Wä, lā'^{s}xaē ax-^{s}ē'dxēs sELE'mē qa^{s}s sE'lx·^{s}īdēxa mō'sgE-mē sE'lē^{s} lā'xa mā'k·!ExḶaatâ^{s}yasa ẋwā'-k!una. Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē ax^{s}ē'dxa wī'wunẋ^{s}unē ḶabE'ma qa^{s}s Ḷapīī'dēs lāq. Wä, lē sE'lx·^{s}īdxa mō'-dzEqē lāx awu'lgoda^{s}yasa hagug·ī'wa^{s}ē ḶE^{s}wa ōg·ī'wa^{s}yasa ẋwā'k!unaxa g·a gwä'ɬēg·a. Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē ax^{s}ē'dxa sE'lbEkwē dEwē'x qa ^{s}mE'lx^{s}īdēs lāq. Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē xElg·Eg·iō'dEq qa k·ā'datsa mā'stowēxag·a gwä'ɬēg·a. Wä, hë'Em Ḷē'gadEs k·ā'datsa mā'stowē xu'l-g·Eg·īwēsa alē'watsɬē ẋwā'gwagu-ma. Wä, g·î'l^{s}mēsē mElē'xatsɬē ^{s}wā'lasa ẋwā'k!una, lē Ḷē'gadEs k·ā'-datsa yā'wapɬēqē.

Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē ō'xḶa^{s}ē qa^{s}s ax^{s}ā'LElōdēsa hEguxḶa'^{s}ē. Wä, hë'Em^{s}xaē gwä'ɬē Ḷā'pa^{s}yas ḶE^{s}wa mE'l-qa^{s}yas. Wä, lā'Ḷa k·!eâ's xu'lk·ēsa haguxḶa'^{s}ē.

Wä, laE'm^{s}xaa k·!eâ's wī'gumx·īsa ẋwā'ẋwagumē qaxs hë'mEnāła^{s}maē k·!ā'ẋwasE^{s}wa qa ë'k·ēs k·E'lx·ałaēna-^{s}yas qa k·!ē'sēs g·ałx·ä'labEndēda ts!ā'-ts!ayîmē lā'qēxs la'ē alē'ẋwēda alē'-wīnoxwaxa k·!ō'lōt!ē.

Preparation of Fibres. *Bark of Yellow Cedar.* — The yellow cedar is peeled about the last week in July. The bark is made to fall on the sap side. It is bent over until the outer bark cracks, which is then pulled off; and the strips of bark, which are about of the width of a hand, are folded. These bundles are placed in salt water, at a place where it is always calm, the ends being weighted down with stones. It is left in the water for from ten days to a month, until it gets spongy. Every now and then it is tested; and when it is soft enough, it is taken out and put into a pool of salt water on the beach.

Then a mat is spread on the beach; a round stick of yew-wood, or a board as wide as the cedar-bark, is laid on it; and while the bark is wet, it is beaten across the fibre, the bark side outward, with a bark-beater of bone of whale (Fig. 64). The beating-surface of these implements is grooved. They

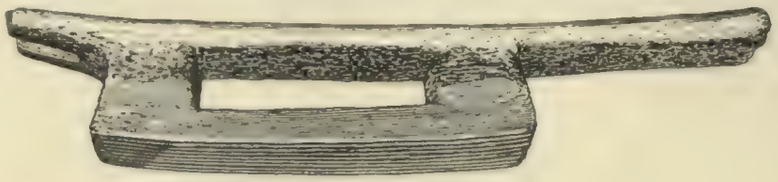


Fig. 64 ($\frac{1}{10}\frac{8}{2}\frac{8}{5}$). Cedar-Bark Beater. Length, 32 cm.

resemble in general character the tapa-beaters of Polynesia and of Central America. After being beaten, the bark is hung over poles to be bleached and dried. The outer layer is pulled off; the inner part is kept and put away. Sometimes the fibre is used mixed with that of the red cedar.

Nettles. — Nettles are cut in October. Formerly a bone knife was used for this purpose. The plants are cut off close to the ground. Fifty stems of nettles are placed in a heap, and are tied together with split cedar-bark in four places, at about equal distances. These bundles are taken home, the tying is undone, and the stems are split with the nail of the thumb. Then they are spread out and coiled up. The coiled nettle-stems are hung over a long pole such as is used for punting canoes, the pole being laid with one end on the ground, while the middle rests on the edge of a box. Then the pole with the nettles on it is placed on a drying-frame, where it is left exposed to sun and wind. In the evening the nettles are covered over with mats so as to keep the dew off. After from four to six days the nettles are dried and are taken to the house. There they are uncoiled and placed on a mat which is spread on the drying-frames over the fire, but a little aside from the fire, so as to prevent them from becoming too hot. Next the nettles are broken, and the inner part is pulled off from the cortical fibres. As soon as the fibres are clean, they are put down on a mat. The fibres of fifty nettle-stems are thus placed together. Then they are bent over in the middle and the two parts are loosely twisted together. They are placed on a board and beaten with the butt-end of a small wedge until all the fragments adhering to the fibres drop off, and the fibres themselves are entirely separated. Then the nettle is placed in a basket, untwisted, and rubbed thoroughly. Then it is combed over the rib-bone of a bear, which is held in the right hand, while the lower end of the fibre (that is, the end taken from the lower end of the plant) is held in the left hand, the second, third, and fourth fingers of the right hand pressing the fibre at the same time firmly against the edge of the

rib-bone. Then the fibre is pulled up and down over the edge until it is quite clean and well separated.

Wool. — The fine hair of the mountain-goat is used for spinning. First the coarse hair is plucked off, and the skin is prepared so that the hair can easily be removed with the nail of the thumb, with a large mussel-shell, or with the sharpened end of a branch. The material that is thus obtained is used for spinning, as will be described later on.

Red-Cedar Bark. — The bark of the red cedar is gathered by the women. They make a cut in the bark of a young tree, near the bottom, and make a split on each side extending some little distance upward. Then the bark is pried up with a large wedge made of hemlock or bone of whale. After it has been started, it is pulled off upward in a long strip, which finally tears off from the tree. After the material has been obtained in this way, the outer rough bark is removed; and the inner bark is dried, and folded up in bundles about 40 cm. long, which are tied near each end with a strip of bark. When it is to be further prepared for weaving mats and basketry, the bark is split into three layers with a splitter made of a deer's ulna.[1] While this is being done, the bark is covered with mats, to keep the light off. The outer layer serves for making very coarse mattings, while the innermost layer is used for the finest mattings. The middle layer is used for making ropes. When the bark is to be used for making mattings, it is soaked in water and split through with the nail of the thumb or with a bone needle.

The same material serves for making shredded cedar-bark. When this is to be made, the bundle of bark is unfolded and placed over the edge of a paddle (Plate XXVII, Fig. 1) which is put up so that it rests with the handle on the ground and with the grip (the part next to the blade) on a forked stick. The woman holds the bark over the edge of the paddle, sitting on the handle. With the right she holds the shredding-implement (Fig. 65), with which she beats the bark right along the edge of the paddle, thus severing and softening the fibres. The material that is thus obtained is used for towels, for infants' bedding, and for making cedar-bark

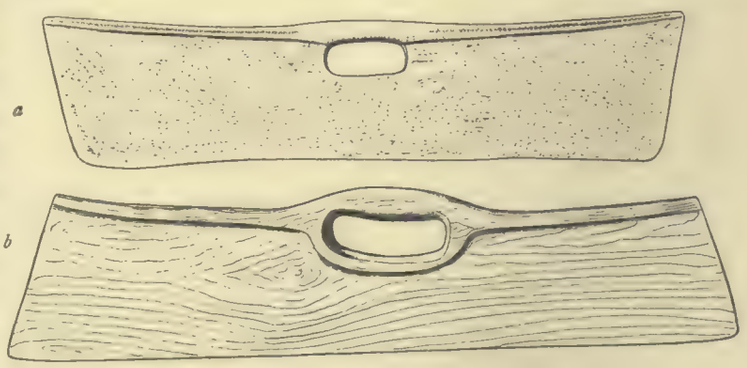


Fig. 65, *a* ($\frac{1}{3}$), *b* ($\frac{1}{3}$). Implements for shredding Cedar-Bark. *a*, Made of bone of whale; *b*, Made of wood. Length, 52 cm., 61 cm.

[1] See Harlan I. Smith, Shell-Heaps of the Lower Fraser River, etc., Vol. II of this series, p. 171.

rings used in purification ceremonials. When dyed red in alder-bark, this material is used for making the cedar-bark rings used in the winter ceremonials.

The type of shredding-implement here represented is characteristic of the Kwakiutl. Those used by the Nootka vary considerably in type (Fig. 66).

Spinning. — The process of spinning is practically the same for all the various kinds of fibre heretofore described. As an example of the method of treatment in spinning, I will describe the making of nettle-thread.

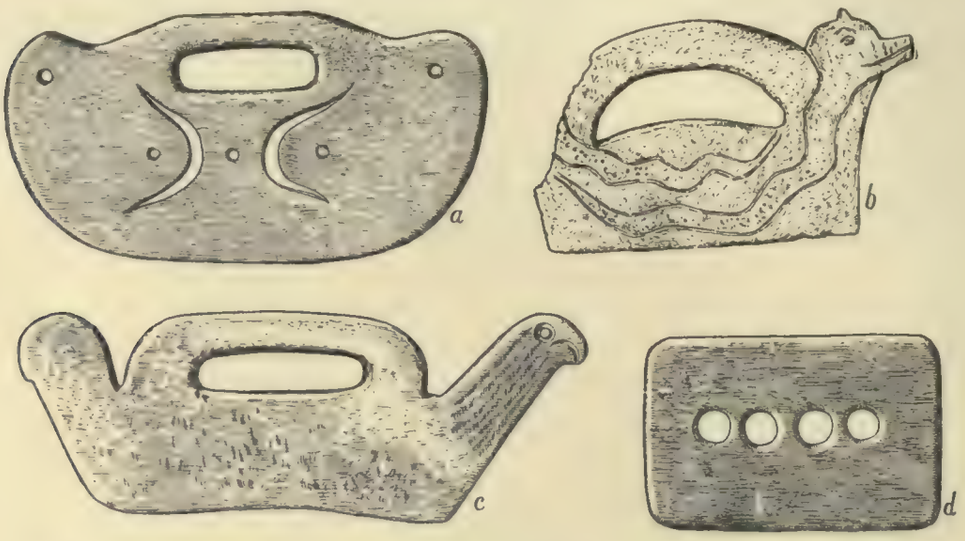


Fig. 66, *a–d*. Implements for shredding Cedar-Bark (Royal Ethnographical Museum, Berlin, No. IV A 2000, 2002, 2001, 2003). ½ nat. size.

When the nettle-fibre has been prepared, a stake of yew-wood a little over a metre long and 5 cm. in diameter is carefully polished, and driven into the ground so that it stands in a slanting position. The woman who intends to spin the fibre sits on the floor in such a position that the pole slants away from her. The nettle-fibre is tied to the top of the stake with cedar-bark, so that the lower part of the fibre is on top. Then she gathers the loose fibre in her hands and winds it around the stake spirally. A small box about 25 cm. long and 15 cm. high is put down on her left-hand side, and a dish containing fine sand is placed on her right-hand side. Then she takes a number of fibres out of the bunch, pulling them out from below, and coils them in the box on her left. While she is holding the end of these fibres in her left hand, she takes out another small bunch of fibres, according to the thickness of the thread that she intends to make, and twists the ends of the first and of the second bunch together. Thus she continues until a long string is coiled up in the box. After about one fathom of string has been coiled up there, she sprinkles some sand over it. A number of boxes

are filled in this way. The fibre which is thus prepared is then spun by means of a spindle (Fig. 67).

The shank of the spindle is two spans and four fingers long. It is made of maple-wood, which is quartered. The shank of the spindle is made out of one quarter. The shank is a little thicker in the middle than at the points, and is thoroughly dried before it is used. The spindle-whorl is made of bone of whale, the anterior part of the skull-bone being preferred. It is ground down on gritstone. Then it is polished, and finally rubbed with deer-tallow. The size of the spindle-whorl differs somewhat, according to the size of the thread to be made. The sizes of those in the Museum collection range from 7 cm. to 8 cm. in diameter. They are not decorated. Many of the spindle-whorls from the west coast of Vancouver Island (Fig. 68) are decorated with geometrical and realistic designs. Most of these are also made of bone of whale, while a few are made of wood and of stone. Geometrical motives, like those represented in Fig. 68, *b*, *d*, *e*, do not seem to occur in spindles made by the Kwakiutl. All those I have seen are flat, like Fig. 68, *f* and *g*. The human figure on the specimen shown in Fig. 68, *a*, corresponds in style to other decorated tools of the Nootka.

Fig. 67 ($\frac{1}{4}^{6}_{9}$). Spindle. Length, 34 cm.

It is remarkable that the spindle-whorls from this whole region are all small, while the spindles used by the tribes of the Fraser River region are very large.[1]

When spinning, the woman holds the spindle in her right hand. The end of the nettle-string is hung over the edge of the box, and the end is twisted around the spindle-shank close to the reel. Then she rubs the spindle down the shin of her right leg, first resting the tip of the shank between thumb and first-finger of her left hand, but holding the thread, as soon as the spindle begins to twirl around, at a distance of about 30 cm. above the spindle (Plate XXVII, Fig. 2). Thus about 30 cm. of fibre are twisted into a fine thread, which is then wound up close to the reel. Then she takes another 30 cm. of fibre out of the box, and proceeds in the same manner until a large ball of thread has been wound on the spindle. Then the ball of thread is taken off and put aside. In spinning nettle-fibre, four different sizes of thread are recognized.

The thread that is used for netting and for other purposes is made up of two of these single threads spun together. This is done in the following manner. Two balls of the single string are placed in a box on the left-hand side of the woman. The ends of the thread are tied on the shaft of the

[1] See Teit, The Lillooet, Vol. II of this series, pp. 211, 212.

spindle close to the reel. Then she holds the two threads in her left hand, — one between thumb and first-finger, the other between the third and fourth fingers. As soon as she holds them this way, the spindle is twirled along the right leg of the woman, but upward instead of downward. Thus the two

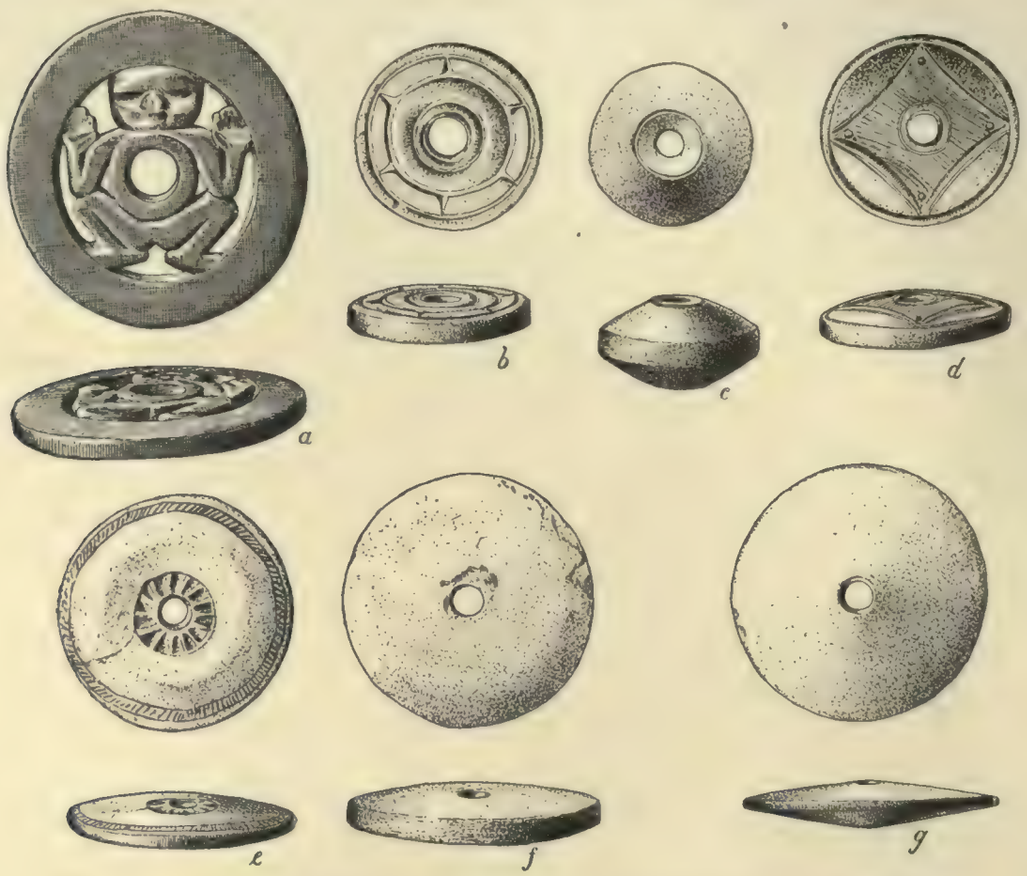


Fig. 68, *a–g*. Spindles (Royal Ethnographical Museum, Berlin: *b–g*, Nos. IV A 699, 698, 697, 2034, 700, 701). ½ nat. size.

strings are twisted together, and the twine which is thus obtained is rolled up on the shank of the spindle.

This method of spinning is also used for making thread of yellow-cedar bark and of mountain-goat wool. In making the first thread of yellow-cedar bark, the beaten fibre is often hung over the right arm instead of over a yew-wood stake. The fibres are taken off, their ends twisted together, and the thread coiled up in a box.

Thread of mountain-goat wool is either all wool or made around a central thread of yellow cedar. Often two women join in preparing thread for spinning. The loose wool is piled up on a mat. One of the women holds the cedar thread and puts some wool around it. The other one takes the prepared fibre

out of the hand of the first one and rubs it down her thigh with the palm of her hand, thus covering the cedar-bark more firmly with the wool. This thread is spun in the same way as described before.

I was told that sometimes four women work together to make the double thread very tight and strong. The first of the women spins the double thread with a spindle on her shin. The second one sits at her right side, but facing her. She works the same twine, rubbing it upward on her thigh. The third one sits farther to the right, facing the second one; the fourth one, still farther to the right again, facing the third one. Each continues the twisting of the thread on her thigh. In olden times dog-hair was mixed with wool for making yarn. Thread for sewing and tying is also made of whale-sinew.

Cedar-Withes. — The thin twigs of the red cedar are cut off and heated fresh over a fire until steam forms in the sap of the wood, which loosens the bark. Then the twigs are pulled through small improvised tongs, and thus the bark and the leaves are removed. The workman begins to twist each twig at the tip while it is still warm. The cedar-twig is held firmly with the left at the tip, with the right at a distance of about half a metre or less from the end; and the part up to this point is twisted, the left hand being held steady, and the twist being made with the right hand, which holds the twig firmly and turns it away from the body. After this section has been firmly twisted, it is wound around the left hand. The right hand again takes hold of the twig a little farther down, and continues to twist. When the twig begins to be too thick to be readily twisted, it is turned over at a distance of from 25 cm. to 40 cm. from the butt-end, according to the strength and length of the twigs. At this point it is sharply bent over by biting, so that the untwisted thick end of the twig lies close to the twisted part. Then the twisted end is taken off from the left hand, and, on being released, at once twists itself around the standing thick end of the twig. When the free twisted end reaches the thick end, it turns over and winds itself backward. Generally the twigs are made so long that the free end twists up and down four times. In this form the twigs are kept, and keep the twist (Fig. 69). They are generally kept in bundles of three or four pieces, which are tied up with thin cedar-withe, often with the end of one of the pieces, and they are tied together. The Indians reckon that a piece of withe as long as the width of the hand requires four full twists.

Fig. 69 ($\frac{1}{4}\frac{8}{5}$). Twisted Cedar-Withes.

Cedar-withes are also used for making open-work baskets (see Fig. 79). Withes are used particularly for large, roughly-made baskets of this type, which are used for carrying clams. The withes are gathered by women, who split them in two. The halves are split again. For smaller baskets these quartered withes are used for making the corner warp.

This process of splitting and preparing cedar-withes to be used for basketry was described to me as follows: —

And this is first, cedar-withes are searched for by the woman in the woods. As soon as she has found them, she pulls off the withes, which hang down at their ends [downward]. When she thinks that she has obtained enough by pulling off downward, she twists the two slimmest and longest withes. When she has done so she puts the two twisted withes on the ground about three spans apart. Then she takes the withes one at a time and places them on the withes with which the (others) are to be tied. She continues putting them on, and stops only when they are all finished. All the thick ends of the withes are at the place where the woman is sitting.

Then she takes the ends of the twisted withes, pulls the ends tight, and ties them together. She also does the same at the other end.

As soon as this is done, she goes home carrying them on her shoulder. As soon as she has entered the house, she puts them down from her shoulder. At once she unties the tying at each end. Then she takes up one of the withes, with the slim end towards herself, and splits it in two, beginning at the thin end. Then she splits it, following down the heart, splitting along as far as the big end.

As soon as it has been split, she

Wä, hë′ɛm g·îl la ā′läsō^{s}sa ts!ɛdā′qa tɛxɛ′masa wî′lkwē lā′xa ā′ʟ!ē. Wä, g·î′l^{s}mēsē q!ā′qēxs la′ē łɛtā′xɛlaxa tɛxɛ′maxs bē′bɛnbāłaē. Wä, g·î′l^{s}mēsē k·ō′taq la hē′łēs la łɛtā′xɛlanɛma, wä, hē′x·^{s}ida^{s}mēsē sɛ′lp!ēdxa ma^{s}łts!ā′qē wī′s^{s}wułtâ g·î′lg·îlt!a tɛxɛ′ma. Wä, g·î′l^{s}mēsē gwā′łɛxs la′ē ʟ!ā′xɛlsxa ma^{s}ł-ts!ā′qē sɛ′lbɛk^{u} tɛxɛ′m lā′xa awī′nak!usē; yū′duχ^{u}p!ɛnk·ē awâ′lag·ōldzasas. Wä, lē ^{s}nał^{s}nɛ′mts!aq!ɛmk·a dā′x·^{s}îdxa tɛxɛ′mē qa^{s}s lō′xuyîndēs lā′xa qēqɛx·-bē′ɫasa tɛxɛ′mē. Wä, hanā′ł^{s}mēsē lō′xuyîndālas. Wä, ā′ł^{s}mēsē gwā′łɛxs la′ē wī′^{s}la. Wä, laɛ′m ^{s}nā′χwaɛm gwā′s-ba^{s}ē ɫēɫō′χ^{u}ba^{s}yasa tɛxɛ′mē lāx k!wā′-dzasasa ts!ɛdā′qē.

Wä, lē dax·^{s}ī′dɛx ō′ba^{s}yasa sɛ′lbɛkwē tɛxɛ′ma qa^{s}s łɛk!ut!ēdē nē′x^{s}ēdɛx ō′ba-^{s}yas. Wä, lē mō′mak·ōdɛq. Wä, lā′xaē hë′ɛm^{s}xat! gwē′x·^{s}îdxa a′psba^{s}ē.

Wä, g·î′l^{s}mēsē gwā′łɛxs g·ā′xaē yî′l-kulaqēxs g·ā′xaē nä′^{s}nakwa. Wä, g·î′l-^{s}mēsē g·āx laē′ʟ lā′xēs g·ō′kwaxs la′ē yî′lχ^{s}walîłaq. Wä, hë′x·^{s}da^{s}mēsē qwē-łâ′lax qē′qɛxba^{s}yas. Wä, hë′x·^{s}ida^{s}mēsē dā′x·^{s}îdxa ^{s}nɛ′mts!aqē lā′xa tɛxɛ′mē. Wä, lē χwē′łēdɛq qa^{s}s hëg·ä′g·îlɛ′lē pā′x·sɛndqēs wī′łɛtâ^{s}ē. Wä, laɛ′m ^{s}nāq!ɛq!ɛqɛndālax dō′maqas; hë′bɛn-dāla pā′x·sɛndɛq lā′g·aa lāx ɫɛk!ux-ɫā′^{s}yas.

Wä, g·î′l^{s}mēsē pā′x·saakuxs la′ē

splits the one side into two again. And when it has been split in two again, she takes the other side, and splits it again. Now there are four pieces out of one withe. Now this is done with the whole number of withes. When all the withes have been split, she puts them away.

ē′ttslend pā′xˑsendxa apsō′dɨłē qa^{s}s ma^{s}ɬtsle′ndēxaakˑ. Wä, gˑî′l^{s}em^{s}xaā′wisē la ma^{s}ɬtsla′k^{u} pā′xˑsaakuxs la′ē ē′tlēd ax^{s}ē′dxa apsō′dɨłasa lā′xˑdē pā′xˑsentsō^{s} qa^{s}s pā′xˑsendēq. Wä, laE′m mō′xˑsēda ^{s}nE′mtslaqē tExE′ma. Wä, lē ^{s}nā′ẋwaEm hë gwē′xˑ^{s}īdEx wā′xaasasa tExE′mē. Wä, gˑî′l^{s}mēsē wī′^{s}la lā paā′kwa tExE′maxs la′ē gˑē′xaq.

Spruce-Root. — Long slender spruce-roots are dug out with the root-digger. They are coiled up and carried home, and, while still fresh, they are split with the nail first into two parts, and each half is again divided, so that the whole root is quartered. Coarse material of this kind is used for the warp-strands of baskets; while finely split spruce-root is used for various kinds of binding, for the wrapping of open-work baskets, for tying the barb of the hook to the shank, and for strong twinings.

The treatment of spruce-root has been described to me as follows: —

She goes again into the woods to look for spruce-roots. As soon as she has found them, she digs them up and pulls them out of the (hole) she has dug. And as soon as she thinks [again] that what she has gathered is enough, she ties them in the middle. And she just comes carrying them in her hand. And she also takes them into her house and puts them down next to the fire.

Immediately she unties the band in the middle. Then she takes red pine and measures three spans [of our hands]. Then she cuts it off (there); and she splits it so that it is like a pair of fire-tongs. Then she takes the thinnest root and winds it around the lower end, perhaps four finger-widths from the end is the place of tying the roots. She puts them on firmly and ties them on.

Then she whittles down the end so

Wä, lē ē′tlēd qā′s^{s}īd lā′xa ā′Llē, ā′läx Llō′plEkˑasa alē′wasē. Wä, gˑî′l^{s}mēsē qlāqēxs la′ē ^{s}lā′plīd qa^{s}s nēx^{s}uqōlsElēq lā′xēs ^{s}lā′pa^{s}ē. Wä, gˑî′l^{s}Em^{s}xaā′wisē kˑō′taq lā hē′ɬalēs la axā′nEmxs la′ē kˑ!Elgˑoyō′dEq. Wä, gˑā′xē å′Em dā′kˑlōtElaq. Wä, lā′^{s}xaē laē′Las lā′xēs gˑō′kwē qa^{s}s lē ax^{s}ā′lɨłas lā′xa mā′gˑîn^{s}walīsasēs lEgwī′lē.

Wä, hë′xˑ^{s}ida^{s}mēsē qwē′ɬōdEx yîḷō′yâ^{s}yas. Wä, lē ax^{s}ē′d lā′xa wunā′guɬē qa^{s}s bā′ɬ^{s}īdēxa yū′duẋ^{u}plEnkˑē lā′xEns qlwā′qlwaxˑtslana^{s}ēx. Wä, lē kˑlE′mtslEndEq. Wä, lē xō′ẋ^{s}wīdEq qa yū′wēs gwē′xˑsōxda tslē′sLālax. Wä, lē ax^{s}ē′dxa wɨ′ɬtōwē Llō′plEkˑa qa^{s}s qExˑā′LElōdēs lā′xa bE′nba^{s}yas, wä′laānawīsē ḷō^{s} mō′dEn lā′xEns qlwā′qlwaxˑtslāna^{s}ēx gˑä′gˑiLEla lā′xa ō′ba^{s}yasē lā qExˑā′LElatsa Llō′plEkˑē. Wä, lē łEklutlē′daEmxs la′ē ma′ẋ^{s}waLElōts.

Wä, lē kˑlax^{s}wī′dEx ō′ba^{s}yas qa

that it is sharp. As soon as she has finished, she puts it up by the side of the fire. This is to be the means of scraping off the bark of the roots. Then she takes one of the roots and puts it over the fire. However, she does not leave it over the fire long, then she takes it off with the fire-tongs.

Then she puts it down and takes its end in her hand and puts it into the split of the scraping-tongs, close to where it is being held. She squeezes together with her left hand the top of the scraping-tongs, and with her right hand she pulls the root. At once the bark begins to peel off. Then the root is white [bodied]. She does the same with all the others.

As soon as all the bark of the roots has been scraped off, the woman begins to split them right through the heart; and when she has gone to the end of the (whole) length, she splits the one half in two, so that it is split in two split (pieces). And when she has gone to the end of the (whole) length, she puts it down and takes the other side of what has first been split and splits it in two also. Now she has split one root into four parts.

Then she coils them up and puts them down on her left side. And she again takes one and splits it in two as she did with the one that was first split. She does so with all the other roots.

This is what is done in making a nice fish-basket or basket. When the woman does not make a nice fish-basket, she splits the roots at once with the bark (on).

ë'x·bēs. Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē ḷā'nōlīsas lā'xēs lEgwī'ɬē. Wä, laE'm x·ī'x·dEmaLExa xō'ẋuna^{s}yasa L!ō'p!Ek·ē. Wä, lē ax^{s}ē'dxa ^{s}nE'mts!aqē lā'xa L!ō'p!Ek·ē qa^{s}s axLE'ndēs lā'xa lEgwī'ɬē. Wä, k·!ē'st!a gē'x·LālaxS la'ē k·!Ep!ī'tsēs ts!ē'sLāla lāq.

Wä, lē k·!îp!ā'līɬaq. Wä, lē dā'x·^{s}īdEx ō'ba^{s}yas qa^{s}s axō'dēsa mā'k·ała lāx dā'ɬasE^{s}was lā'xa xEwē'ła^{s}yasa x·ē'x·dEma. Wä, lē q!wē'sāɬasēs gE'mxōɬts!āna lāx ō'xtâ^{s}yasa x·ē'x·dEma. Wä, lē nē'x^{s}ētsēs hë'ɬk·!ōts!āna^{s}ē lā'xa L!ō'p!Ek·ē. Wä, hë'x·^{s}ida^{s}mēsē saq!wâ'lē xEx·unā'^{s}yas. Wä, laE'm la ^{s}mE'lk!Enx·^{s}īd, lēda L!ō'p!Ek·ē. Wä, lē ^{s}nā'ẋwaEm hë gwē'x·^{s}īdxa waō'kwē.

Wä, g·î'l^{s}mēsē ^{s}nā'ẋwa la x·ī'g·Ekwa xEẋunā'^{s}yasa L!ō'p!Ek·ē laē'da ts!Edā'qē pā'x·sEndā'laq ^{s}nā'q!Eq!Endālax dō'maqas. Wä, g·î'l^{s}mēsē lā'bEndEx wā'sgEmasas la'ē ē'tts!End pā'x·sEndxa apsō'dīɬē qa hë'lōẋ^{s}wīdēs la mats!a (?) paa'kwa. Wä, g·î'l^{s}mēsē lā'bEndEx wā'sgEmasas la'ē g·ī'g·alīɬaq qa^{s}s ax^{s}ē'dēx apsEx·sä'sa g·ā'lē pā'x·sEntsō^{s}s qa^{s}s pā'x·sEndē^{s}xaaq. Wä, laE'm^{s}xaē mō'ẋ^{u}sEn pā'x·sEndxa ^{s}nE'mts!aqē L!ō'p!Ek·a.

Wä, lē qEs^{s}ī'dEq qa^{s}s lē g·ī'g·alīɬas lā'xēs gEmxag·ā'waliɬē. Wä, lā'^{s}xaē ē'tlēd ax^{s}ē'dxa ^{s}nE'mts!aqē qa^{s}s pā'x·sEndēq lā'xēs g·ā'lē gwē'x·^{s}īdaasxa g·ā'lē pā'x·sEntsō^{s}s. Wä, lē ^{s}nā'ẋwaEm hë gwē'x·^{s}īdxa waō'kwē L!ō'p!Ek·a.

Wä, hë'Em gwē'g·ilatsa aē'k·!äxēs LEqē'la ḷE^{s}wēs lExē'la. Wä, g·î'l^{s}mēsē k·!ēs aē'k·!ēda ts!Edā'qaxēs LEqē'läxs la'ē hë'x·^{s}idaEm pā'x·sEndxa L!ō'p!Ek·ē ḷE^{s}wīs xEẋuna'^{s}ē.

Some of the warp-strands used in baskets are made of rather thick roots, which are split by removing the outer part on two opposite sides, so that the split root has two parallel faces.

Ropes. — For making heavy rope of cedar-withes, very long slender twigs are selected. Only a few suitable twigs are found on each tree, and it requires considerable time to get a sufficient supply for making a large rope. The twigs are collected, and tied up in bundles with thin cedar-withes, which are tied around the bundle in four places. The man carries them home on his shoulder, and places them in the corner of the house, where they are protected against the heat. Then a pair of tongs are driven into the ground near the fire, so that they slant towards the fire; while the man who is making the withe-rope takes his seat facing the fire and in front of the tongs, so that they slant away from him. The withes are heated over the fire by moving them to and fro until they are thoroughly heated. Then they are pulled through the tongs with the right hand, while the left hand is used for squeezing the legs of the tongs close together. Thus the withes are pulled through several times until all the bark is removed. After this is done, the withes are twisted, the thin end being held in the left hand, while the twisting is done with the right hand; and the twisted ends are turned around the left, as described before. After the whole withe has been twisted, it is not doubled up, as described before, but is put down lengthwise on the floor of the house. Next it is beaten with a small wedge on a short piece of cedar-board. The wedge is held at the point, and the withes are beaten with the thick end. Next a fire for heating stones is made near the corner of the house, and dulse and a number of old mats are piled up near the door of the house. Early in the morning the fire is lighted; and when the stones are red-hot, they are covered about 25 cm. thick with dulse. The cedar-withes are placed on top, and are covered again with dulse about 25 cm. thick. Two large bucketfuls of fresh water which has been warmed by the fire are poured out over the pile, which is then covered with old mats, and is left for about ten minutes. Then one end of the mats is lifted, the withes are pulled out as needed, and the man begins to make his rope. Two pairs of cedar-withes are placed down on the floor, the withes in each pair side by side, so that the thin end of one is next to the thick end of the other. Then the farther ends of the two pairs are tied together with a piece of rope, which is turned around a forked hemlock-stick, about a metre long, which has been driven into the ground near the fire. The workman then takes hold of the near, free ends of the two pairs of cedar-withes, — one pair in the right, the other pair in the left hand, — and twists them to the right. After each pair has been twisted, they are twisted together into a two-stranded rope. When about two-thirds of these withes have been used up, another heated withe is taken out of the pile, and its thick end is spliced to the thin end of one of the withes that form

part of the rope. When the other withe gives out, the thin end of a new withe is spliced to its thick end. After the required length of rope has thus been completed, the workman begins again at the beginning, and puts in a third double strand. This is begun in the same way by putting two withes together, the thick end of the one being next to the thin end of the other. These are tied in at the beginning of the rope, twisted, and then turned in. This strand is spliced in the same way as before described. After the rope has thus been completed, it is stretched out between two stakes in front of the house, and is left there to dry.

A specimen of very rough cedar-withe rope of this kind, collected at Rivers Inlet, is made in a similar manner. The long withes are twisted as here described, but the rope consists of three single strands. The three strands are coiled together; and when the thin end of one of the withes nearly gives out, a new strand is simply put in. This rope has a very loose texture. Much better rope of the same sort is made by the Nootka and Quilleyut, who use it extensively for whaling-lines. A few specimens that I have examined do not appear to be made of double withes, as here described, but simply show a very strong and even twist of strong cedar-twig withes, each withe being about 13 mm. thick, and the whole rope having a thickness of about 25 mm.

Crowns for wedges and chisels are made of cedar-withes in the following manner: A long withe is turned into a ring about 5 cm. in diameter, beginning at the middle of the withe. First the thick end is twisted in and out through the ring until one circuit has been completed. Then the thin end is treated in the same way, so that a complete ring, consisting of a three-stranded rope, is made. This ring is placed on the slightly sharpened butt-end of the wedge, which is battered down until it is quite flat and the ring is held firmly in place (see p. 323).

Cedar-withe rope is also used to make an elastic support for the bedding of the cradle. The cradle is made of wood, and the two opposite long sides are connected with cedar-withe ropes, which are made in the following manner: Two holes are drilled, one above the other, on opposite sides of the cradle. A cedar-withe is pushed through the upper hole on one side of the cradle from the inside, leaving the thick end standing out on the inside of the cradle for a distance greater than the width of the cradle. It passes along the outside of the cradle to the drill-hole just under the first one, and the thin end is pushed through this hole to the inside, and is carried straight through the cradle to the upper hole on the opposite side. From there the thin end passes along the outside to the lower drill-hole on the same side, and is brought in again through this lower drill-hole; so that now there is one strand of cedar-withe connecting the two holes, and two free ends on the inside of the cradle, standing out each from one side and running in opposite directions.

These are twisted over the central strand into a three-stranded rope, the ends bring tucked in between the two drill-holes on each side.

Other ropes are made of cedar-bark. These are made by women. The bark of the red cedar is cut into strips from 3 mm. to 5 mm. wide. A bundle of these, which is to form one of the strands of the rope, is held firmly in the left, and twisted to the right. Three bundles of this kind are started, and are then tied together. About 30–40 cm. of each strand are twisted in this way, and then they are coiled firmly together; the end from which the rope-working begins being generally held with the big toe of the right foot. While the twisting of the rope continues, the untwisted cedar-bark which is to be made into the strands is folded up and tied in the middle; and when the twisting of the strands continues, the untwisted end of one of the strands is tied firmly around the unfinished rope to prevent it from untwisting (Fig. 70). This kind of rope is used extensively for fish-lines, carrying-straps, and also for heavy ropes. These are often made of five strands. The material is easily spliced by putting in additional strands of bark. In carrying-straps the free ends of the woven part of the strap are twisted directly into ropes (see Fig. 124). The ends of anklets and bracelets often consist of fringe made of two strands twisted together. These are generally held in place by a knot at the end.

Fig. 70 ($\frac{1}{11\,\frac{1}{2}}$). Unfinished Cedar-Rope.

Fig. 71 ($\frac{1}{2\,\frac{1}{2}}$). Plaited Cedar-Rope.

Another type of cedar-bark rope (Fig. 71) is made by braiding together three strands, each consisting of three layers of strong cedar-bark about 5 mm. wide. In some necklaces nine-strand braidings occur (Cat. No. $\frac{16}{6308}$). Some thin, wide ribbons are made of cedar-bark which is woven like diagonally-woven belts and straps (see Fig. 127).

Thin fish-lines are also made of human hair, which is twisted and braided. These are used particularly for the small hooks with which kelp-fish (*Pleurogrammus monopterygius*) are caught.

Lines are also made out of the hide of sea-lion and of deer. When making thongs out of sea-lion hide, the piece of hide is put down flat, and a strip

about 10–15 mm. wide is cut off all round the circumference, the cutting continuing spirally towards the centre. After a long strip has been removed, it is pulled taut. A slit is cut through the end and a stick is pushed through. Then one man takes hold of each end and begins to twist. When it is nearly dry, the twisting is continued some more. Then the two ends are held tight by two men, while a third one drives a stake into the ground at the middle of the twisted thong, to which it is tied. Then the two men bring the ends of the twisted thong together, and one of them lets go. Then one end twists itself around the other one.

Deer-skin for making lines is treated in the same way, except that it is twisted at one end only, one stick being braced in the crack of a rock. After the deer-skin rope has been made in this manner, it is plaited.

Bear-guts are also treated in the same manner; but it is considered difficult to make ropes out of them, because the two opposite sides are of uneven lengths.

Light harpoon-lines are made of the sinew of the porpoise.

Trolling-lines are made of young kelp (Fig. 72). These lines are prepared by men. The kelp is dried over a fire of alder picked up as driftwood on the beach. The kelp shrinks to a very even thickness, the fibre twisting to a certain extent. The method of splicing parts of the fish-line is shown in the illustration.

Fig. 72 ($\frac{1}{11}\frac{6}{40}$). Spliced Piece of Kelp Line.

Fig. 73 ($\frac{1}{7}\frac{6}{057}$, $\frac{1}{21}\frac{6}{07}$). Reels with Bark String.

For tying, thread of nettle-fibre, made as described before, is used. For holding splices of wood, the bark of *Prunus emarginata*, *v. villosa* Sudw. (ɬE'n^{s}wum) is used. It is peeled in spiral lines around the tree, a cut slanting upward being first made. It is kept wound up on reels (Fig. 73).

For tying harpoon-heads, nettle-fibre unspun, or porpoise-sinew, is used. Sewing is done with deer-sinew. The holes for passing the thread through are made with awls made of the ulna of the deer or of splinters of bone.[1]

BASKETRY. *Square Weaving* (dzā'gwił). — Only coarse mats and coarse or large baskets are woven in such a way that the strands run parallel to

[1] See Harlan I. Smith, Shell-Heaps of the Lower Fraser River (Vol. II of this series, Fig. 35, p. 171).

the edges (Fig. 74). Thick cedar-bark is used for this purpose; and the width of the strands is considerable, ranging from 1 cm. to 1.5 cm. In making a mat of this kind, the cedar-bark is middled and hung over the batten. Then one side of the pieces of cedar-bark is split into strands of the width that is to be used in weaving. A very narrow thin strip of cedar-bark is twined in along the batten so as to hold the strands in place. Generally this twining is done so that in each twist of the twining two strands are held together. Then other pieces of cedar-bark are split in the desired width, and are woven in up and down. The weaver begins on the left-hand side and works to the right. In beginning the first row, part of the first woof-strand is doubled over the edge of the mat, and the double woof which is thus originated is woven in. The mat is finished off below by turning over the warp-strands and twining them in with a very narrow double strip of cedar-bark just over the lowest woof-strand.

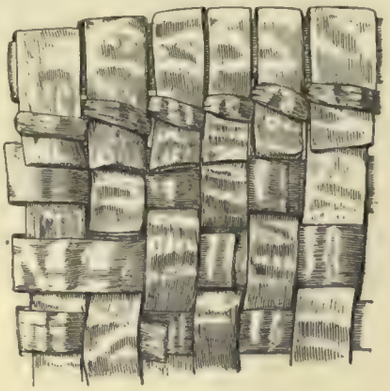


Fig. 74 ($\frac{1}{5}\frac{6}{0}\frac{8}{2}\frac{9}{3}$). Detail of Square Matting.

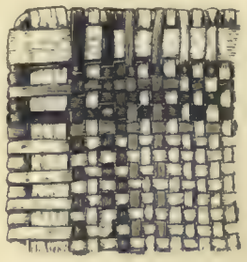


Fig. 75 ($\frac{1}{5}\frac{6}{0}\frac{8}{0}\frac{9}{7}$). Border of Square Matting.

Other mats of this kind are finished off with a broad strip of cedar-bark (Fig. 75), and the loose ends are woven in at the bottom; while at the sides the woof-strands are twisted around the outermost warp and turned back, thus forming the next lower woof-strand. This method of weaving is employed for the long mats which are used as seats at feasts. The mats are used doubled over along the batten edge. They are made in the same way as described before. When the warp is hung over the batten, split, and twined, the twining is left in, and first a broad strip is inserted. One of these mats, when doubled over, is 47 cm. wide and 170 cm. long.

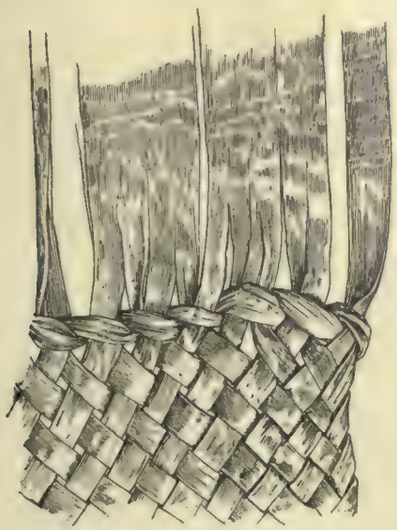


Fig. 76 ($\frac{1}{5}\frac{6}{0}\frac{8}{2}\frac{9}{7}$). Detail of Diagonal Matting.

Diagonal Weaving. — Most of the finer mats, baskets, and all woven belts and straps, are woven diagonally (Fig. 76). The weaving is started in the same way as that of the mats the warp and woof of which run parallel to the edges. The cedar-bark is hung over the batten and twined

as shown in the illustration. The essential difference in the hanging of the cedar-bark in the two cases lies in the fact that in the diagonal mat the bark is doubled in twining, because the same piece has to serve as woof and warp. This stitch is called q!ulē′dzō; that is, "flat on itself." When the edge of the mat is reached, the strands are turned over at a right angle, and the weaving is continued in the same manner as before; the strands which ran first from left above to right below running now from right above to left below. The same method is followed in weaving narrow straps. When the lower end of the mat is reached, the strands that run from right above to left below are left standing, while those that turn from left above to right below are turned over and woven in for about three or four stitches. In this manner the whole lower edge is finished off; and after the mat has been completed, all the loose strands are cut off. The edge of this matting is called mā′lagaxstɛnd. When making mats of this kind, the weaver finishes a space that can easily be reached without moving from the place where she is sitting. In order to avoid the entangling of the strands, the loose ends that are not in use are tied up. A small dish of water is kept next to the worker, from which she fills her mouth and blows the water over the mat (Plate XXVIII, Fig. 1).

Open-Mesh Weaving. — A third stitch which is used for open matting is called yibɛlō′ (Fig. 77, *a*). In this stitch the cedar-bark is split into strips of the desired width, which are twined together with another double strip of cedar-bark. The lines of twining are from 1 cm. to 3 cm. apart, so that the whole mat is quite open. Bags are made in the same stitch (Fig. 77, *b*). Larger bags of this kind are started in the same way as a mat, the upper end of the warp-strips of the cedar-bark being turned over and twined in. The first few rows are made in this manner. Generally the first and second lines of twining are quite close together. The second and third may be from 5 cm. to 7 cm. apart, while towards the bottom of the bag the distance between the lines is decreased. While the bag is making, the strip of cedar-bark which

Fig. 77, *a* ($\frac{1}{6}\frac{6}{1}\frac{6}{2}$), Detail of Open-Work Matting; *b* ($\frac{1}{8}\frac{6}{0}\frac{6}{8}$), Bag for melting Spruce-Root (width, 14 cm.).

is used for twining is folded up on the left-hand side of the mat, and is generally tied to the loose ends of the next higher line of twining, so as to be out of the way while the work is being carried on. As soon as the work on the mat has proceeded so far that the bottom of the bag is reached, the warp-strands are turned over completely; and the twining is now continued on the opposite side, the ends of the twining which have been folded up being undone and used for continuing the work. In all the lower rows the twining is carried back so that it joins the next higher row of twining; and in this way the rows of twining are made into a continuous spiral.

This stitch is used for food-mats, covers to protect the canoe against the sun, covers used in steaming food. They are used under salmon that are being cut, and very large mats of this kind are used for the sides of camping-tents. Bags of this kind are used for holding clam-muscles, fern-roots, and clover-roots.

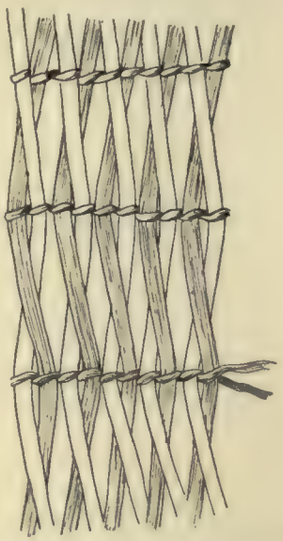


Fig. 78 ($\frac{16}{11\,11}$). Details of Twisted Open Mat.

A similar kind of open matting is made by crossing two adjoining warp-strands once between two lines of twining (Fig. 78).

Bird-Cage Weaving. — Spruce-root baskets are made in bird-cage stitch (k·!îlg·ik^{u}) (Fig. 79). Sometimes the spruce-root with which it is tied is wrapped around twice, as shown in Fig. 79, *b*; but generally the wrapping between the warp-strands is single, as

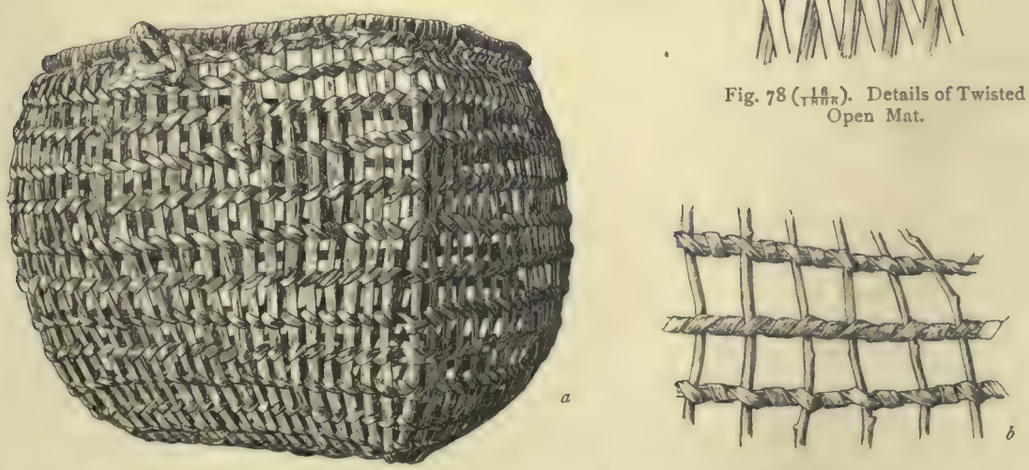


Fig. 79, *a* ($\frac{16}{5\,0\,2\,5}$), Spruce-Root Basket (height, 25 cm.; length, 28 cm.); *b* ($\frac{16}{7\,1\,4\,6}$), Detail of Weaving.

shown in Fig. 79, *a*. The direction of the wrapping alternates, one line turning to the left, the next one to the right. In some of the fine baskets of this kind, a number of lines — from two to five — turn to the left, then a number of lines to the right. At the corners the wrapping is carried twice

around the corner-rod, — once to the left, and once to the right. At one of these corner-rods the direction of the wrapping is changed, as just described. In order to give greater stiffness to the basket, these corner-rods and a warp-strand near the middle of the long side are made of cedar-twigs. The spruce-root woof which is tied to the warp runs spirally around the basket. In order to give added strength to the bottom, three or more of the middle warp-strands of the short sides are joined together, and are firmly tied with spruce-root. In some of the baskets the bottom of which is rather narrow, the bird-cage stitch continues down to the bottom bar, while in others the spruce-root warp of the long sides and that of the short sides are interwoven (Fig. 80). The upper rim of the basket is made by turning over all the warp-strands along a stout spruce-root, and tying the whole with spruce-root wrapping. The warp of this basket is called ë'k·!ēbāła; the woof, ẋwēm; the corner-branches, L!ā'L!EXENūts!EXsdē; the bottom stick, g·î'lg·a^{s}lîs k·!î'lx·dE^{s}ma.

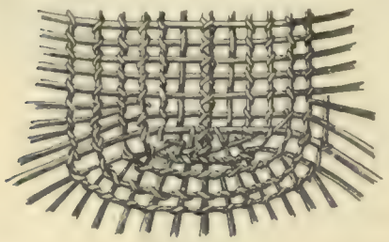


Fig. 80 ($\frac{8}{10}$). Detail of Bottom of Spruce-Root Basket.

Carrying-baskets of this type have sometimes a very fine weave, and are provided all along the rim with a continuous series of small loops made of cedar-withes, and used for lacing the top of the basket with cedar-bark rope. The Kwakiutl put the basket upside down on a stake when weaving (see Plate XXVIII, Fig. 2), while the Koskimo put the basket down on the ground.

The making of a fish-trap by this method of weaving is described in the following lines (see Fig. 147): —

As soon as all (the spruce-root and cedar-withes) have been split, she takes the split withes and puts them down at the place where she is going to weave the fish-basket that she is going to make; and also the split root which is to be the means of tying them together; that also she puts down at her place where she is about to weave the fish-basket that she is going to make.

First four thick split roots are taken. She puts them down this way.[1] This has the name of "beginning of the stiff side," these four long ones with their

Wä, g·î'l^{s}mēsē wī'^{s}la la paa'kuxs la'ē ax^{s}ē'dxa paa'kwē tEXE'ma qa^{s}s g·ā'xē g·ī'g·alił lā'xēs k·!î'lg·asLaxēs LEqē'laLē. Wä, hë'^{s}misēda k·!î'lg·EmLēda dzEdE'-kwē L!ō'p!Ek·a. Hë'Em^{s}xat! g·āx g·ī'-g·alēlEms lā'xēs k!waē'lasLē qō lāL k·!E'lk·ałxēs LEqē'laLē.

Wä, hë'^{s}mē g·îl ax^{s}ē'tsō^{s}sēda mō'-ts!aqē ḶESḶEk!ugē'sa paa'kwē L!ō'p!Ek·a. Wä, lē ax^{s}ā'liłaqg·a gwä'łēg·a.[1] Wä, hë'Em Ḷē'gadEs g·ā'laēdzEm L!ā'L!axEn-

[1] Crossing at right angles.

tips apart. Then she takes a pliable root and puts the (thin) end on one of the stiff-sided ones; and she takes a split root and ties it with a knot to the stiff-sided one, with the means of tying the stiff-sided ones.

And first the ends of the stiff-sided ones are tied together. As soon as this is done, she puts on the means of tying the stiff-sided ones, and she ties them on. She continues to add warp-strands in this way.[1] Now she ties (the woof) around the warp-strands. She only stops adding warp-strands when she arrives at the widest part in the middle of the fish-basket.

As soon as her tying arrives near the narrow neck, then she takes warp-strands of the fish-basket out again, one by one, and the mouth of the fish-basket gradually narrows.

As soon as the place where the kelp-fish are to enter is of the size of one of our flat hands, it is finished. Then the place where the kelp-fish are to enter the inside of the fish-basket is of the size of a flat hand.

Immediately she goes into the woods to look for a maple-tree. As soon as she finds one that grows straight up, she pulls off the bark. Then she also splits off the bark on the [back] outside, and removes it. But she keeps the white inner bark. When she has enough, she goes home to her house. Immediately she splits it into narrow strips, and she ties the ends of three of them together.

wa^{s}ē, yî′xa mō′ts!aqē la wā′x·sbała. Wä, lē ax^{s}ē′dxa pEqwa′ qa^{s}s ax^{s}ā′LElōdēs ō′ba^{s}yas lā′xa ^{s}nE′mts!aqē lā′xa L!ā′xEnwa^{s}ē. Wä, lē ax^{s}ē′dxa ^{s}nE′mts!aqē paā′k^{u} L!ō′p!Ek·a qa^{s}s q!udzEmk·lî′ndēs lā′xa L!ā′xEnwa^{s}ē Ļe^{s}wa k·lî′lx·dEmäsa L!ā′xEnwa^{s}ē.

Wä, hë′xōĻ g·îl yaLō′x^{s}wītsō^{s}sēda ō′ba^{s}yasa mō′ts!aqē L!ā′xEnwa^{s}ya. Wä, g·î′l^{s}mēsē gwā′łExs la′ē ax^{s}ā′LElōtsa k·lî′lx·dEmäsa L!ā′xEnwa^{s}ē qa^{s}s k·lîlx·^{s}ā′LElōdalēs. Wä, lē g·înwa^{s}nā′kulaxa q!wā′sgEma^{s}yasg·a gwä′łēg·a.[1] Wä, la^{s}mē k·lî′lx·sē^{s}stālasa q!wā′sgEma^{s}ē. Wä, lē ā′łEm gwāł g·î′nwa^{s}nā′kulaxa q!wā′sgEma^{s}yaxs la′ē lā′g·aa la ĻEg·ō′yâ^{s}yasa LEgE′mē.

Wä, g·î′l^{s}Em^{s}xaā′wisē lā′g·aē k·lî′lk·a^{s}yas lā′xa la ē′x·ała lāx t!ō′gwaanūda^{s}yas awā′xsta^{s}yasēxs lā′a^{s}xat! k·lîqâ′laxa ^{s}nā′ł^{s}nEmts!aqē lāx q!wā′sgEma^{s}yasa LEgE′mē qa wî′łExsta^{s}nā′kulīsa ō′xawa^{s}yasa LEgE′mē.

Wä, g·î′l^{s}mēsē Lā′xdEn lā′xEns ēyasâ′qē wā′sgEmasas g·ä′pōĻasasa pEx·^{s}î′taxs la′ē gwā′ła. Wä, lā′^{s}xaē LA′xdEn lā′xEns ēyasâ′qē wā′dzEgExstaasasa g·ä′pōĻasasa pEx·^{s}î′tē lāx ō′ts!â′wasa LEgE′mē.

Wä, hë′x·^{s}ida^{s}mēsē la ā′LE^{s}sta lā′xa ā′L!ē qa^{s}s lē ā′läx sā′q!waEmsa. Wä, g·î′l^{s}mēsē q!ā′xa ë′k·ētEläxs la′ē hë′x·^{s}îdaEm saq!ux·^{s}î′dEx xō′χuna^{s}yas. Wä, lā′^{s}xaē pā′x·^{s}îdEx xEgwē′g·a^{s}yas qa^{s}s lawä′lēq. Wä, lā′Ļa axē′lax ^{s}mE′ldzowē dEna′ts. Wä, g·î′l^{s}mēsē hē′łalē axā′nEmasēxs g·ā′xaē nä′^{s}nakwa lā′xēs g·ō′kwē. Wä, hë′x·^{s}ida^{s}mēsē dzEt!ē′dEq qa ts!ē′łts!Eq!astō′wē^{s}s. Wä, hë′x·^{s}ida^{s}mēsē mō′makōdEx ō′ba^{s}yasa yū′duχ^{u}ts!aqē.

[1] Putting in warps between the foundation of roots that cross at right angles, and tying on the woof spirally.

After she has tied the ends together, she twists two of them together; and when (the piece) is eight spans long, she twists the (third) one on to it. Now the twisting of the thin string is in three strands.

As soon as she has finished, she twists one more of the same thickness and also the same length. These are to be the suspenders of the fish-basket. As soon as the rope-making is finished, she takes her fish-basket and pulls the end of the suspender — for that is the name of the two ropes — through at one side of the fish-basket, beginning at the place where it first bends inward toward the place where the kelp-fish go in. She ties the end of the suspender there firmly; and she ties also the other end to the opposite side of the fish-basket.

As soon as this is done, she takes the other (rope) and ties one end to the other side[1] of the fish-basket; and she also ties the other end at the opposite side. Then they are measured so that the suspenders are equal distances apart on the sides of the fish-basket, so that it does not tilt over when it is put into the water at the place where kelp-fish are caught.

As soon as this is done, she takes cedar-bark and splits it into narrow strips. They are long. As soon as they are in thin strips, she twists them so that they are a twofold twisted thin rope. When it is four fathoms long, it is finished.

Then she ties (this) float-line to the suspenders. When it is done, she

Wä, g·î'l^{s}mēsē gwāł mōguxʟälabɛ'ndɛqēxs la'ē mɛ'lx·^{s}īdxa ma^{s}łts!a'qē. Wä, g·î'l^{s}mēsē ma^{s}łgunā'łp!ɛnk· lā'xɛns q!wā'q!wax·ts!āna^{s}yaxs la'ē mɛlē'g·întsa ^{s}nɛ'mts!aqē lāq. Wä, laɛ'm yā'yūduẋ^{u}-ts!agēsē mɛlā'^{s}yasa wī'łē dɛnɛ'ma.

Wä, g·î'l^{s}mēsē gwā'ła la'ē ē't!ēd mɛ'lx·^{s}īdxa ^{s}nɛ'mts!aqēxa hë'ma^{s}xat! wā'g·itē. Wä, lā'xaē hë'ɛm^{s}xat wā'sgɛmē. Wä, laɛ'm tē'k·!ʟɛsa ʟɛgɛ'mē. Wä, g·î'l^{s}mēsē gwā'łēda mɛlā'^{s}yasēxs la'ē ax^{s}ē'dxēs ʟɛgɛ'mē, wä, lē nē'x·sōts obā'^{s}yasa tē'k·!a, — qaxs hë'^{s}maē ɬē'gɛmasa ma^{s}łts!a'qē mɛla'^{s}yas, — lāx apsā'nō^{s}yasa ʟɛgɛ'mē g·ä'g·īʟɛla lāx g·ā'lē gwā'nag·īɬats g·ä'pōɬasasa pɛx·^{s}ī'tē. Wä, lē ā'ɛla mōẋ^{s}waʟɛ'lōts ō'ba-^{s}yasēda tē'k·!a lāq. Wä, lē ē't!ēd mō'ẋ^{s}waʟɛlōts a'psba^{s}yas lā'xa apsanâ'-^{s}yasa ʟɛgɛ'mē.

Wä, g·î'l^{s}mēsē gwā'ła la'ē ē't!ēd ax^{s}ē'dxa ^{s}nɛ'mts!aqē qa^{s}s mō'ẋ^{s}waʟɛlōdēs ō'ba^{s}yas lā'xa apsanâ'^{s}yasa ɬɛgɛ'mē. Wä, lē ē't!ēd mō'ẋ^{s}waʟɛlōts a'psba^{s}yas qa naqâ'łōtas. Wä, la^{s}mē' ^{s}mɛnsī^{s}lä'lakwa qa ^{s}nɛ'm^{s}mēs awâ'lagâłaasasa tē'k·!a lāx ēwanâ'^{s}yasa ʟɛgɛ'mē qa k·!ē'sēs tsē'tɛlaxs la'ē ax^{s}stā'nō lā'xa ʟɛg·a'saxa pɛx·^{s}ī'tē.

Wä, g·î'l^{s}mēsē gwā'łɛxs la'ē ē't!ēd ax^{s}ē'dxa dɛna'sasas wē'lkwē qa^{s}s dzɛx-^{s}ē'dēq ts!ē'łts!ɛq!astōgwīlaq. Wä, lē g·î'lsg·îlstâ. Wä, g·î'l^{s}mēsē wī'wulx·sɛxs la'ē mɛ'lx·^{s}īdɛq qa mā'ma^{s}łts!ag·ēsēs mɛlā'^{s}yas wī'łɛn dɛnɛ'ma. Wä, g·î'l^{s}mēsē lā mō'p!ɛnk·ē wā'sgɛmasas la'ē gwā'ła.

Wä, lē mā'ẋ^{s}waʟɛlōtsa ē'madzɛtâlaʟē dɛnɛ'm lā'xa tē'k·!a. Wä, g·î'l^{s}mēsē

[1] Crossing the first rope.

takes dry cedar-wood and whittles it with her knife. Its length is one span and four finger-widths. The lower end is thin, but it has a round knot at the end. And the top of that float is bottle-shaped.[1] When it is done, she ties it to the end of the float-line just over the knot at the end. That is all about this.

gwā′ɬExs la′ē ax^{s}ē′dxa lE′mxwa k!wax-LĀ′^{ɛ}wē qa^{s}s k·!ā′x^{s}wīdēsēs k·!ā′wayuwē lāq. Wä, lē mō′dEnbāla lā′xEns bā′-Läqē wā′sgEmasas. Wä, lā wī′ɬbaxa bE′nba^{s}yas. Wä, la lō′xsEmē mō′x^{u}-ba^{s}yas; wä, la pō′xbē ō′xtâ^{s}yas, yîxa ē′masē.[1] Wä, g·ī′l^{s}mēsē gwā′ɬExs la′ē mō′x^{s}waLElōts ō′ba^{s}yasa ē′madzEtâlaLē dEnE′m lāx ë′k·!ēLEläsa mō′x^{u}ba^{s}ē. Wä, laE′m gwāɬ lā′xēq.

Twilled Weaving. — The finest baskets of the Kwakiutl are made of twilled weaving in cedar-bark. A variety of methods of twilling are used. In some rather coarse mats and baskets the stitch shown in Fig. 81 is employed (mā′waqîk^{u}). The specimen here illustrated shows the bottom of a basket and the adjoining portion of the sides. The bottom is made by a simple interweaving of broad strips of cedar-bark. After the bottom is completed, it is twined together with a narrow strip of cedar-bark, and then each strip is divided with the nail of the thumb into three parts. The weaving of the woof is done spirally; and the particular method of twilling here described consists in weaving two down and one up. In the present specimen this method originates through the endeavor to keep the central one of the three strips into which each wide cedar-strip has been divided over the woof-strand. Diagonal mats are made in the same manner. This weave is used for mats for bedding, for pillow-bags, and for sacks in which dry salmon and herring-roe are kept. Most of the baskets made in this way are narrow and high. They are used like boxes, but are considered as more convenient to handle when travelling by canoe.

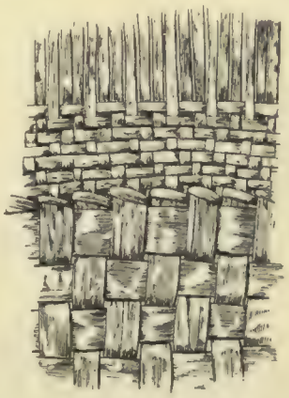


Fig. 81 ($\frac{1}{2}\frac{6}{7}$). Detail of Twilled Weaving.

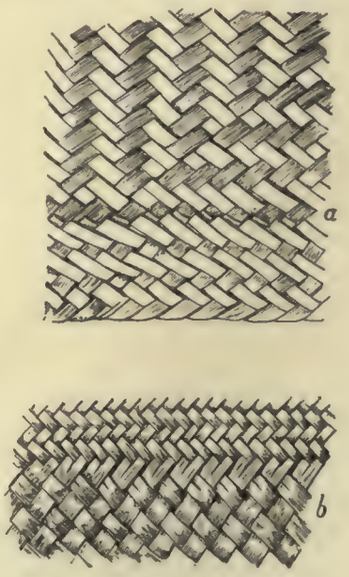


Fig. 82, *a* ($\frac{1}{1}\frac{6}{7}$), *b* ($\frac{1}{1}\frac{6}{4}$). Details of Twilled Weaving.

The ordinary method of diagonal twilling is shown in Fig. 82, *a*. It will readily be seen that this method of twilling is practically the same as that used in making diagonal mats; and the lateral edges

[1] ē′mas is also the name for a grave-front put up for a person whose body has been lost owing to his death by accident.

and the bottom are also treated in the same way as those of the ordinary diagonal mats. A sitting-mat of this kind, when doubled up for use, is 60 cm. wide and about 180 cm. long. The width of strips in large twilled mats is about 5 mm. In bags the diagonal bottom is often made of wider strips of bark, which are split on the sides and twilled (Fig. 82, *b*).

Ornamented Grass Baskets. — The ornamented grass baskets of the Makah, which have been described in detail by Professor Mason,[1] are not used by the Kwakiutl, although a few rough specimens of this kind are made by the Koskimo. The few baskets of this kind that I have seen are very small. They have no inner rod, like the lattice-work of the Makah, but are made by regular twining of grass around a cedar-bark warp. Ornamentation is made by inserting twilled woofs of cedar-bark dyed black. A thin strand of white grass is wrapped around each strand of black cedar-bark, passing always diagonally over the two warp-strands under which the black cedar-bark passes.

Spoon-Baskets. A peculiar kind of stitch is used for the baskets in which spoons are kept. All of these are made of cedar-bark, with warp running straight up and down, and horizontal woof (Fig. 83). The baskets are quite wide and very narrow, with flat sides. One specimen ($\frac{16}{8245}$), for instance, is about 36 cm. wide and quite flat. The lowest part of the basket is always made in the ordinary up-and-down weave, while the sides are made in open-work. This is made by crossing two warp-strands, and then weaving them together, as before, by two or more woof-strands. A repetition of this device gives an open-work effect to the whole side of the basket. The rim of the basket is also in open-work. The last woof row is regular twining. Then the warp-strands are twisted, crossed, and woven into the border presently to be described.

Fig. 83 ($\frac{16}{7257}$). Spoon-Basket. Height, 34 cm.; length, 36 cm.; width, 16 cm.

Varying effects in this open-work are brought about by inserting a greater or less number of solid lines between the twisted open meshes. While the specimen here illustrated has four rows of solid weaving between the open meshes, another specimen ($\frac{16}{2238}$) has the bottom made of checker-work, each

[1] Aborginal American Basketry (Report of the U. S. National Museum for 1902, p. 417).

strip of which is split into two parts for the sides. The sides begin with nine rows of solid weaving, followed by thirteen rows, each consisting of three solid lines separated by open meshes. The top of the basket is formed by nine rows of solid checker-work, followed by the regular type of border.

Still another basket of this kind ($\frac{16}{8183}$) has also wide strips in the bottom. The sides begin with eight rows of solid weaving, followed by six lines, each consisting of two rows of solid weaving separated by very open meshes. The top consists of six lines of solid weaving followed by the same kind of border. The specimen $\frac{16}{8182}$ has a very coarse bottom, each strand of which is split into three parts for forming the sides. These begin again with eight solid lines, followed by four bands, each consisting of two solid rows and a line of meshes. The top has six solid lines and the same finish, except that the twisted warp-lines are not crossed. The specimen $\frac{16}{8240}$ is quite similar to the last. It begins again with eight lines, followed by fifteen solid double lines separated by meshes. The top is finished off with a solid weaving of eight lines and the same uncrossed border.

Somewhat exceptional is a square basket from the Koskimo ($\frac{16}{8239}$), in which the sides give an irregular appearance owing to the fact that the twisted strands are sometimes turned in the wrong direction, which has the effect of making the last woof-strand seem to be enclosed in the open meshes. The general plan of the side of this basket consists of a beginning with four solid rows, followed by six solid rows of three each, divided by lines of open meshes. The basket is finished off on top with three rows of solid work and untwisted border.

A large wedge-basket of the Koskimo ($\frac{16}{8207}$) is quite similar to those heretofore described. The bottom is narrow, and made of broad strips of cedar-bark, which are split into three parts on the sides. The sides begin with nine lines of solid work, followed by nine rows of solid weaving, consisting of two lines each, and divided by open meshes. The top is finished off by five rows of solid weaving; and the border is as usual, with crossing warp-strands.

It appears from these examples that the general design of the spoon-basket consists of a rather wide beginning, followed by a regular alternation of open meshes and solid work, and generally finished off by a broader strip of solid work; while the meshes on top are formed by the twisted warp, which is either crossed or uncrossed. It is worth noticing that exactly the same number of stitches occurs in a number of these baskets, which shows clearly that the type of decoration is handed down by a strict tradition.

Borders. — The border of these baskets is made by a simple kind of wrapping (Fig. 84). The warp-strand is twisted for some distance, and a rope consisting of a number of untwisted strands of cedar-bark in five or six layers is laid against these strands on the inner side of the basket. The strands

are held by a wrapping (*a*), by means of which the warp-strand is tied firmly from the outside against the rope. Then it is turned over to the left over the wrapping. The wrapping is carried over the rope, and catches the next warp-strand, which is then laid over to the left in the same manner. In this way a peculiar braided effect is obtained on the outside, while on the inside a simple wrapping appears. In some cases where the cedar-bark is rather thick, only a part of the twisted warp-strands is braided into the border, while part is cut off. The effect of the border differs considerably, according to the width of the binding that is employed.

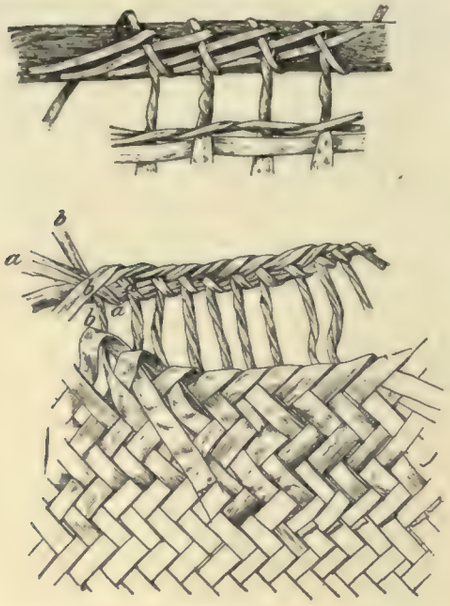


Fig. 84 ($\frac{1}{1}\frac{6}{3}\frac{8}{7}$). Detail of Border of Basket.

Double Basket. — There is one double square basket in the collection (Fig. 85) which was obtained at Knight Inlet. It is made in the following manner. The bottom of the two baskets has been woven in one piece. In the middle, where the two baskets join, a set of additional cedar-bark strips of about the same length as the bottom-strands have been laid on, and are woven in two rows, so that the warp of the bottom at this point is double. After the bottom

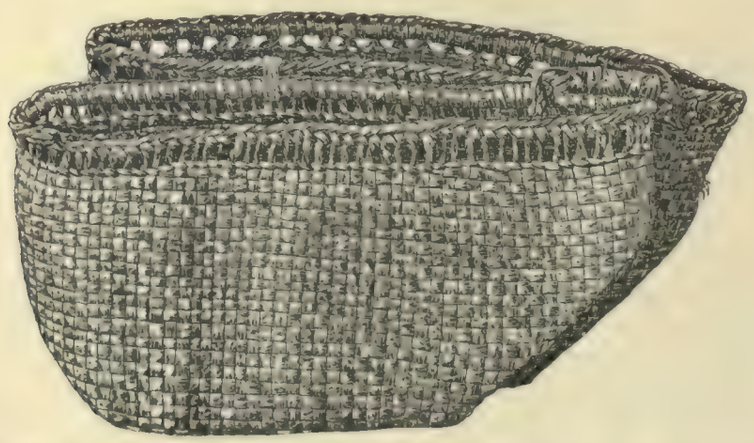


Fig. 85 ($\frac{8}{1}\frac{6}{3}\frac{8}{7}$). Double Basket. Knight Inlet. Height, 14 cm.; length of bottom, 34 cm.

was completed, these warp-strands were turned up, and in this way warp material was supplied for finishing each basket separately all around in the same way as an ordinary square basket. The sides of these baskets are

ordinary checker-work. The top is finished off with a twining of spruce-root, over which the warp-ends are strongly twisted, and braided over a rope, as described before. The effect of this braiding is a little different from the usual style, on account of the appearance of the spruce-root which was used for the wrapping.

Rain-Coat. — The ordinary method of square-mat weaving is also used for the manufacture of the rain-coat. This is ordinarily made in the style of a long double mat (see Plate XXXIII), the upper part of the mat being cut out in the middle so as to form the two shoulder-pieces of the garment, the lower portion of which forms a large square sheet, which is worn on the back.

Decoration of Basketry. — Designs made by twilling are arranged in such a way that on part of the surface the twilling runs in vertical lines, while on adjoining parts the twilling runs in horizontal lines (Fig. 86). Fields of this kind are fitted together in various ways. In one mat broad zigzag bands (Fig. 87, *a*) are produced by this method; another one is decorated with an alternation of squares (Fig. 87, *b*); while in a basket the series of squares are arranged diagonally (Fig. 87, *c*). Since the contrast of these fields appears only in reflected light, the grouping of squares gives just as much the impression of groups of right-angled triangles meeting at the right angles. A small pouch of this kind (Fig. 87, *d*) is decorated with a broad vertical band in the middle. In the finest old baskets made by the employment of these methods, the width of the cedar-bark strip is sometimes less than 2 mm.

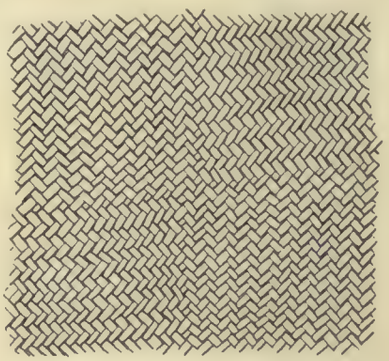


Fig. 86 ($\frac{1}{1}\frac{6}{6}\frac{8}{7}$). Details of Twilling, showing Method of producing Designs.

The occurrence of these patterns is interesting in view of the theories relating to the origin of patterns that have recently been propounded. There is a certain similarity between the surface-ornaments brought about by adzing, which were referred to before (p. 330), and those made by twilling. The distinction of the adzed surfaces is also seen, in reflected light only; and the difference between adjoining surfaces lies in the fact that the lines of adzing are at right angles to each other, — one set running with the grain, the other across the grain. Although the carpenter-work is done by men, the basketry-work by women, it may be that these two styles of surface-decoration are related. It is certainly just as conceivable that they have exerted a mutual influence as that pottery-decoration depends upon basketry-decoration, as has so often been claimed. In joining the vertical and horizontal rows of twilling, the square patterns divided by diagonals appear which have been so fully discussed by Max Schmidt.[1] It seems to me obvious that the occurrence

[1] Indianerstudien in Zentralbrasilien, pp. 330 et seq.

of these patterns in cedar-bark basketry and in adzing shows clearly that their origin is not necessarily given by the technique of palm-leaf weaving, — although their origin in South America may have been facilitated by it, — but that they easily develop in all kinds of twilling. The use of the motive also shows that Schmidt's square is — at least among the Kwakiutl — not at all felt as a decorative unit.

I have not seen any mats of square weave among the Kwakiutl that are decorated, while mats of diagonal weave sometimes show geometrical designs.

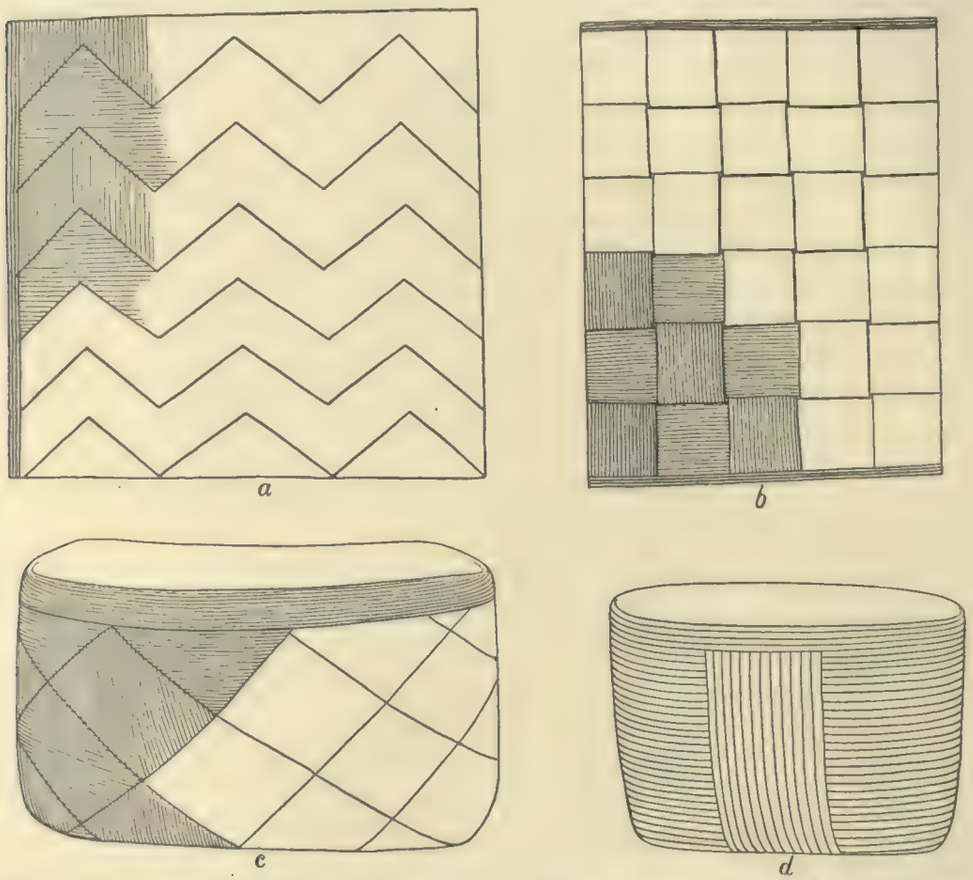


Fig. 87. Designs in Twilled Matting and Basketry. *a*, *b* ($\frac{18}{81\,07}$), Designs on mats; *c* ($\frac{18}{80\,34}$), *d* ($\frac{18}{86\,00}$), Designs on Baskets.

These are made in cedar-bark which is dyed black in mud (see p. 404). An additional decoration is sometimes made with cedar-bark which is dyed red. Almost the only kind of decoration used by the Kwakiutl consists in designs made by weaving in black strips alternating with undyed strips. In this manner black checkers are produced on the surface, which stand in rows (Fig. 88). By intercrossing designs of this type, diagonal squares are produced. I have also seen a few mats with chevron designs made in the same way. On baskets

made in square weaving, designs are sometimes formed in a similar manner. In one twilled basket made by carrying a woof-strand over two warp-strands and under one, a design is made by an alternation of three undyed strands and two blackened strands, thirteen such double rows of blackened strands occurring on the side of the basket.

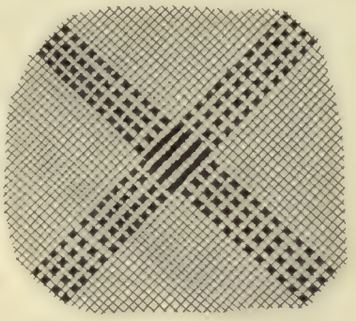


Fig 88 ($\frac{14}{8\,12\,12}$). Checker Design in Mat.

The decoration of mats of this kind made by the Nootka is much more elaborate. Some square mats are found the edges of which are finished off in the same way as the baskets, and which are surrounded by one broad strip of cedar-bark, followed by three black lines made by weaving in three single black strands separated by two undyed strands. Other square mats are divided into squares by broad color-bands consisting of narrow black and red strips of cedar-bark. In still others both warp and woof consist of alternate black and undyed strands, by the interweaving of which continuous vertical and horizontal black stripes are produced. These are sometimes worked out in more complex designs consisting of squares and right angles.

Weaving. *Methods and Materials.* — The only method of weaving used by the Kwakiutl consists in the twining of loose material with thread, and in the simple interweaving of coarse threads. The material most commonly used for weaving is the fibre of the yellow cedar, from which blankets, capes, and aprons are made.

Cedar-Bark Blankets. — The blanket is woven on a loom similar to that used by the Tlingit for weaving their woollen blankets.[1] It consists of two stakes about 60 cm. high, which are put up a little farther apart than the width of the blanket. They are sometimes carved. The stakes are connected by a batten four fingers wide, with a groove in the upper edge, and holes in the lower edge. The ends of the batten are fastened to the tops of the stakes with loops of cedar-withes. A narrow strip of cedar-bark is hung from stake to stake, and the ends of the loose yellow-cedar bark which is to be used as the warp are hung over it, and are held in place by a twining of two coarse threads of yellow-cedar bark, which is applied just under the strip over which the warp is hung. The warp is long in the middle, short at the sides, so as to give the lower border of the blanket a curvature. Generally one finger-width or more of the warp at each end consists of thread of mountain-goat wool. The strip over which the bark has been hung is taken off, pressed tightly into the groove of the batten, and sewed on, the sewing-thread passing through the holes in the batten. Next a fine double thread of yellow-cedar

[1] See G. T. Emmons, The Chilkat Blanket (Memoirs American Museum of Natural History, Vol. III, Part IV, pp. 337 et seq.).

bark is twined around the cedar-bark about 5 mm. under the top thread. Each bundle that is enclosed in the twining is about one finger in width. The bundles are twisted a little, to make it easier to separate them. The successive lines of twining are about a finger-width apart. Every two fine threads are followed by one coarse thread. When working the blanket, it is gradually rolled up over the batten. In order to make the curvature at the lower part of the blanket, the twining-threads are placed farther apart in the middle, and a sufficient number of additional ones are added there. Finally a strip of skin — often mink-skin — is sewed to the upper edge. The lower border is called "the wood edge." Sometimes it is made of wool. The lower edge consists generally of four lines of twining, which are close together. At each lower corner a woollen tassel is attached, which hangs down to the level of the lowest part in the middle of the blanket. Finally a leather strip is sewed to each upper corner for tying the blanket together.

From an examination of the specimens in the Museum, some additions to this description may be given. The lateral borders of all the cedar-bark blankets are woven of thread made either entirely of mountain-goat wool or of an inner body of cedar-bark covered over with mountain-goat wool. The border consists of a number of warp-strands which are hung in the same way as the body of the whole blanket. The method of weaving is illustrated in Fig. 89, and corresponds exactly to the method of weaving the border of the Chilkat blanket described by G. T. Emmons,[1] the only difference being that there is no border-string passing through the terminal loops, which appear in the general view of the blanket like a finishing cord. The texture of the border-strip differs considerably in various specimens. In some the border is very coarse, and consists of a few warp-strands only, eight being the smallest number that I have counted; while in the more elaborate specimens I have counted thirty and more. It is only in these elaborate specimens that the edge is set off distinctly in the form of a rope.

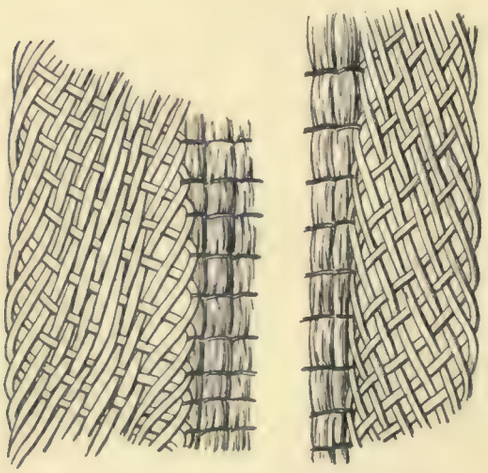


Fig. 89, ($\frac{1}{1}\frac{1}{0}\frac{1}{4}\frac{1}{0}$, $\frac{1}{1}\frac{1}{1}\frac{1}{2}\frac{1}{5}$). Detail of Border of Cedar-Bark Blanket.

In some cases this edge is further ornamented by running down one line of weaving, skipping two strands; while others are run down, skipping one

[1] Emmons, The Chilkat Blanket (Memoirs of the American Museum of Natural History, Vol. III, Part IV, p. 341).

strand. In the illustration to the left, in Fig. 89, a border is shown in which three ridges are brought about by this procedure.

In most specimens the head-line (the first woof-line seems to consist of a stout band of cedar-bark, over which the warp-lines are hung, being twined immediately under the head-line with a strong string. About half a centimetre under this twining is another twining made of coarse stout cedar-bark. Under this is a series of four lines of twining made of mountain-goat yarn. While in the upper twinings larger bundles of warp are held together, the wool twining starts the division of the warp material into bundles of the same width as is carried down through the blanket. The lower border consists also of four lines of wool twining. Sometimes there are as many as three of these borders. The fur border around the neck is made of skin cut into a long narrow strip, which is passed through the meshes between the first and second twining, and wrapped around the head-line.

There is one blanket made of red-cedar bark in the collection which differs from all the others. The head-line consists of a rope of red-cedar bark, over which shredded red-cedar bark is hung and twined in, the ends of the shredded cedar-bark bundles being quite near to the twining. This material is woven in exactly the same way as the diagonal cedar-bark mats, and is held together at the lower end by twining with very coarse cedar-bark string, the loose ends of the shredded bark hanging down as a fringe. This specimen is a ceremonial blanket, and was evidently made very hastily.

Cedar-Bark Cape. — In weaving a cedar-bark cape, two posts are driven into the ground, converging upward. The distance between the poles at the top is just large enough to allow the head to pass through the finished cape (Plate XXIX, Fig. 2). The length of the side equals the distance from the elbow to the shoulder. The inclination is determined by the spread of the elbows in paddling. A strip of bark of red cedar, which forms the upper edge of the cape, is tied around the top of the frame. The work proceeds as described before. As the cape widens downward, new strips of cedar-bark are inserted. To the lower edge a number of woollen tassels are attached.

The capes in the collection of the Museum are all made in the same manner as the blankets. Many of them have throughout a twining of wool. The twining is carried spirally around the cape. The fur around the neck is applied in the same manner as the fur of the blankets. One of the capes is lined with long fur, which is slit into very narrow long strips, which are put on the inner side over the bundles of cedar-bark, and are thus twined in. Not all capes begin with the four lines of twining just under the upper end which are characteristic of most cedar-bark blankets.

Garments of the same kind are described by Vancouver. He says, "The clothing of the natives here was either skins of the sea otter, or garments made from the pine bark; some of these latter have the fur of the sea otter,

very neatly wrought into them, and have a border to the sides and bottom, decorated with various colours. In this only they use woollen yarn, very fine, well spun, and dyed for that purpose; particularly with a very lively and beautiful yellow."[1] It seems from this that in former times the borders which are now plain white, or sometimes decorated with a single line made of red yarn, were made in designs of dyed mountain-goat wool. I think there can be little doubt that the two blankets in the British Museum described by George T. Emmons in his discussion of the Chilkat blanket were old blankets from this region.[2]

Aprons. — Aprons are made of coarse double thread of yellow-cedar bark or of yarn of mountain-goat wool, which is wrapped tightly around a board equalling in length the distance from the elbow to the knuckles of the bent fingers. This is the length of the apron. Then the first turn is taken off from the board, the rope which is to form the waistband is pulled through, and just under it a twining is inserted. Thus they continue taking off one turn after another, at the same time pulling the belt through the turns. The belt is long enough to go one and a half times around the waist. The apron is made wide enough to cover the whole front of the body. After the whole apron is done, the lower ends are cut open and knotted. Generally there is only one twining at the upper end, but as many as three twinings are sometimes used.

All the aprons in the Museum are made of shredded red or yellow cedar-bark or of wool. In the better specimens the shredding is not carried quite so far as in cedar-bark that is to be used for towels. Each shredded piece is from 2 cm. to 3 cm. wide, and these are strung on the braided waistband, and are twined together. Immediately under the twining the shredded pieces are divided up into a considerable number of small bundles, each of which is twisted to the left, while the lower ends are loose. A few very coarse specimens are strung on a waistband of shredded red cedar; and the part of each bundle under the twining is allowed to hang down loose, without being twisted into strings.

Waistbands of mountain-goat wool are made in the same way, a number of threads being kept together immediately under the waistband by twining. The thread consists of two strands, and is sometimes left unknotted at the lower end.

In one specimen in the Museum collections ($\frac{16}{8783}$), each bundle that is held together by twining consists of from three to four pairs of warp-strands, which are middled by the belt-line. There are three lines of twining immediately under the belt-line, very close together. The belt-line of another

[1] George Vancouver, A Voyage of Discovery to the North Pacific Ocean, and round the World (London, 1798), Vol. II, p. 281.

[2] Memoirs of the American Museum of Natural History, Vol. III, Part IV, Plate XXIV.

specimen ($\frac{16}{8122}$) consists of a three-strand braid of mountain-goat-wool yarn. By means of four lines of twining a band about 5 cm. wide is woven just under the belt-line, while the lower part consists of loose fringe.

A man's apron ($\frac{16}{82\,4\,6}$) is made of yellow-cedar bark woven in the same way as the ordinary diagonal mat. It is about 25 cm. square, and is finished off at the lower end by two lines of twining, so that the loose ends of the cedar-bark stand out at the lower end like a short stiff fringe.

Netting. — Netting-needles are made of alder or willow. A piece of wood between two branches is cut off, and is halved for large netting-needles, while the smallest ones are made out of quartered wood. The largest size is one span and one hand-width long and two fingers wide; the next size is one span long and one finger and a half wide; the third size, a short span and one finger wide; and the smallest size is as long as the width of the hand and as wide as the little finger. The middle part of the netting-needle is made very thin, so that the light shines through (Fig. 90).

Large mesh-measures are made of maple. These are simply flat pieces of wood with long rounded edges, cut off square at the ends, about 4 cm. wide and 7 cm. long; while the next size is a little smaller. The smallest ones are made of rib-bones of deer, which are cut off in suitable lengths. The larger of these sizes is made of the large ribs, while the smallest consist of pieces of the smallest ribs.

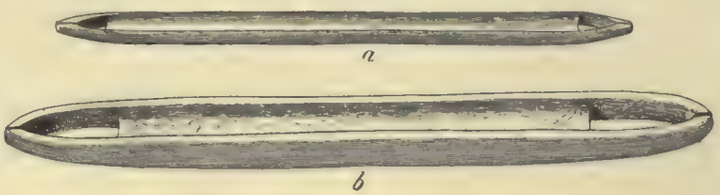


Fig. 90, *a* ($\frac{16}{21170}$), *b* ($\frac{16}{21177}$). Netting-Needles. Length, 22 cm., 27 cm.

In making the large olachen-net, the woman begins with the finest nettle-twine, using the small netting-needle, on which the thread is wound. First the twine is turned twice around the smallest net-measure. Then it is tied and pulled off from the measure. With this mesh the net is started. A string is tied to the first mesh, and is attached to the end of a short stake which is driven into the ground. The woman nets sitting in front of this stake. In netting, the woman puts the shuttle through the mesh downward, and every mesh is secured by a half-hitch knot. In this way a circle of forty meshes is made. This is to form the end of the olachen-net. When the net is about twenty rows of meshes long, a cedar-stick about 30 cm. in length is pushed through every other mesh of the first row. A line is tied to the middle of the stick, and it is hung from the poles on which the salmon are dried in the house. When the net gets longer, it is hauled up by means of this line, and finally it is thrown over the poles. The work is then continued with the next larger net-measure and with a little heavier twine. In beginning work with

the heavier twine and the larger net-measure, a piece of red-cedar bark is tied in to indicate the beginning of this portion of the net. Two fathoms and a half are made in this manner. Then the third net-measure and a still heavier twine are used for continuing. After two fathoms of this size have been made, the largest netting-needle, the heaviest twine, and the largest measure are used, and three fathoms more are made. The edge of the large net is made of double twine with the large netting-needle, the size of the mesh being the same as that of the end of the net. After one round of these meshes has been made, they are tied up with a double knot and cut off. A further description of nets will be found in the chapter on fishing.

Preparation of Skins. — All work on skins is done by the men. Elk-skin which is to be softened is placed in a brackish pool on the beach into which fresh water runs, but into which kelp also drifts at high water. There it is left for four days. Then it is taken out; and if the hair comes off readily, a board is put up edge downward, under which the hide is pulled through, so that the hair is all scraped off. Then the skin is put up on a frame of the same shape as that used by the inland tribes.[1] The edge of the hide is perforated, and it is tied to the frame with cedar-withes. First it is stretched from head to tail, then crosswise. After it has been stretched, it is left for a short while in the sun to dry a little. The frame is put up in a somewhat slanting position; and the woman takes a scraper, consisting of a wedge of yew-wood, and scrapes it downward on the hair side. Thus all the water is squeezed out. Then the flesh side is scraped with the back of a cockle-shell which is fastened to a long handle. When all the fat and tissue have been scraped off and all the water has been pressed out, it is scraped down once more with the shell scraper. Next the whole hair side is rubbed thoroughly with a little oil of the silver perch, and is scraped once more with the yew-wood wedge until all the oil has been pressed out again. The skin is put in the sun; and after this, it is scraped once more until it is quite dry. Next it is taken out of the frame. A stake with wedge-shaped top, about six inches wide, is put up, and it is pulled over this to soften it. Then it is rubbed between the hands. Elk-skin is never smoked by the Kwakiutl, although the coast tribes farther to the north do so. Bear-skin that is to be prepared so that it will retain the hair is placed in fresh water, where it is weighted down with stones. After three days it is taken out of the water and put into the drying-frame, being spanned as tight as possible. Next the flesh side is thoroughly cleaned with a knife made of a mussel-shell. Then it is scraped with a cockle-shell. A mixture of two thirds urine and one third fresh water is heated so that the hand will just stand the heat. This is sprinkled over the flesh side of the skin, which is scraped again with the cockle-shell. The skin is stretched still tighter, because the stretching and scraping have expanded

[1] See Vol. I of this series, Plate XIV.

it somewhat. Next the hair side is turned upward and is thoroughly wetted. A scaffold is put up, on which the drying-frame is placed horizontally, the hair side upward. Stones are put on it to stretch it still more. Water is thrown up against the flesh side from below. On the following morning the stones are taken off, and the skin is stretched again. First the head-end is drawn towards one side of the frame, then the tail-end towards the opposite side, and finally the two sides are spanned firmly. Two people always pull on opposite sides at the same time. Now the frame is put up with the tail-end downward, and the flesh side is scraped once more with a cockle scraper after having been wetted with urine. This is continued until water which is sprinkled upon it runs off perfectly clean. After this, it is scraped with the yew-wood scraper. When no more liquid can be pressed out, it is rubbed down with the back of the cockle-shell scraper. It is put in the sun for a couple of hours, and then placed in the shade, where it is worked again with a yew wedge to soften it. Then the flesh side is oiled and once more scraped with the yew wedge. When the end of the yew scraper remains entirely dry, the skin is taken out of the frame and pulled over the wedge-shaped stake, like the elk-skin. Bear-skins, after being prepared in this manner, are generally cut square.

Small skins are scraped in the same way. The scraping is generally continued until the roots of the hairs show on the flesh side.

While at present the skins of sea-otters and land-otters are cased, in former times the sea-otters were treated differently. The process was described to me as follows: The man who works on the sea-otter skin has the hair over his forehead tied up with hemlock. After the sea-otter has been flayed, the skin is cut square and put into water. The whole layer of fat remains attached to the skin. While it is in the water, the hair is placed upward. On the following morning a board is put up, which leans against two slanting stakes. Then the skin is thrown over it so that the head hangs down in front and the tail-end hangs over the upper edge of the board. A mat is spread in front of the board. Then the workman cuts down through the fat until the blue color of the skin begins to show; and the whole layer of fat is removed, dropping down on the mat in front of the board. Then the skin is turned over, and the fat is removed from the other half. A cedar-withe rope is pulled through the eyes, and the skin is hung by it to a horizontal pole. The legs and the tail are also tied together with strong ropes of cedar-withes. Next four heavy stones are tied with loops to cedar-withes, and these are hung to the tail-end. While being tied on, the stones rest on a box just under the otter-skin. After they are tied to it, the box is removed. The skin is left to stretch for a whole day. Then a frame of hemlock-poles about 10 cm. in diameter, tied with cedar-withes, is made. The skin is taken down, placed on a board, and holes are cut near the edge. Then carefully smoothed

hemlock-sticks about a finger thick are pushed through these holes; thin curved sticks being pushed through the tail-end and head-end, while straight sticks are placed along the sides. The head-end, and then the tail-end, are tied to the frame with a soaked kelp line. These are pulled alternately until the skin is well stretched. Then the sides are stretched in the same way. The sides are tied to the frame in two places. The skin is stretched so tight, that the liquid begins to ooze out of it. Then the flesh side is scraped with the cockle-shell scraper. It is also soaked in a mixture of two thirds urine and one third water. When all this has been scraped off, it is soaked again in water. It is stretched still more; and heavy stones are put on one end of the skin, while the other end is scraped again. Then the stones are pushed over to the other side, and the side that was before weighted down is scraped, first lengthwise, then crosswise. Then the stones are taken off and the skin is again tightened. First one side, then the other, is pulled so that it presents a perfectly straight edge. After the whole skin has again been wetted, the frame is put up horizontally and the skin is weighted down with stones. Thus it is left every night. On the following morning the weights are taken off, the skin is tightened and scraped again, and finally smoothed with the back of the cockle-shell. After all this, it is scraped with a mussel-shell knife, from the head downward. If there should be any blood left, it will be pushed out by this procedure. Then the skin is put outside the house to dry, but every evening it is taken in. A small fire is kept burning during the night, and the skin is placed some distance away from it. It is covered with a mat to keep off the soot. When the nose-end is dry, the whole skin is ready.

Painting, Decorating, and Dyeing. *Painting.* — The following materials are used for paints. Powdered coal is used for black. Graphite is also used for painting wood. It is mixed with about one-third of its own amount of salmon-roe. Sometimes coal is mixed in.

For painting coppers, graphite, which is found in Knight Inlet, mixed with mica and coal, is used. First some water is put into a paint-dish, and mica is rubbed into it. Then coal and graphite are rubbed in. Finally this is mixed with salmon-roe.

Red is obtained from red ochre found in Knight Inlet, Koskimo, and in a few other places. It is roasted in the fire; and when red-hot, water is poured over it, and it is covered over with mats. By this process the large pieces of ochre are broken up. The material is put first in a high pile; and when it is done, the pieces fall apart, and the mat which covers it sinks down. This is an indication that the process of preparation has been completed. It is taken out, powdered, and kept in a long slender skin bag (Fig. 91). Another kind of red paint is made by steaming in a pit a fungus (k·!ēts!) which grows on alder. The fungus is placed on hot stones which are covered with leaves of *Asplenium cyclostrum* Rupr. (gems). Then water is poured

on, and it is covered with another layer of the same kind of leaves. Over these, mats are placed. Thus it is left all night. Then it assumes a red color. After this, it is scraped fine or rubbed on a gritstone.

Green is made of a copper salt found in Knight Inlet. Generally a fine clay is mixed with this salt. A green is also obtained from the rotten wood taken out of the knot-holes of old alder-trees.

A light dull blue is obtained from a bluish clay found in Koskimo, where it occurs in a broad vein in which pieces of metallic lustre are embedded. This bed is about three metres wide, and on each side of it ochre is found.

Fig. 91 ($\frac{16}{8344}$). Paint-Bag. Length, 42 cm.

White is obtained from burnt shells. Although all kinds of shells are used for this purpose, those of small clams are considered best. They are put on logs and covered over with other logs. These are burnt, so that the shells come to a white heat. Then all the coal is carefully removed, and the shells are taken out. They are placed on wet moss and sprinkled with water, so that they fall to pieces. The paint is kept in boxes.

Another white paint, which is used particularly for painting paddles, is made from a black soil found at the head of Drury Inlet. When it is burned, it becomes white, and is used in this condition. — Brown paint is obtained from sepia, which is dried.

All these paints are mixed in paint-dishes. Those for black paint are generally made of dolerite, while those for green paints are often made of serpentinoids (Fig. 92). The painter keeps in his mouth a piece of dried salmon-roe which is wrapped up in some shredded bark of the red cedar. He chews this, and spits the saliva which gathers in his mouth into the paint-dish. The paint is rubbed in this fluid. The painter ascertains whether the paint is thick enough by putting a little with a brush on a piece of wood. If the wood should show through, he continues to rub more paint into the dish.

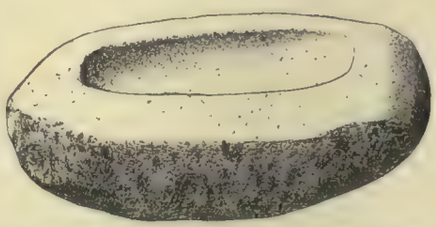


Fig. 92 ($\frac{16}{8081}$). Paint-Dish. Length, 22 cm.

Brushes are made of split cedar-sticks which are cut off in a slanting

direction (Fig. 93). Stiff bristles are inserted in the split stick, which is then wrapped with spruce-root.

Decorating. — Inlaying is used particularly in the decoration of the rims of dishes, and sometimes in decorating wood with abelone-shells. The places

Fig. 93. Paint-Brushes (Royal Ethnographical Museum, Berlin, No. IV A 1843). ½ nat. size.

to be decorated are cut out carefully in the form of the piece of shell or of the opercula to be inserted. The inlaid pieces are fastened with gum. Glue made by boiling skin of old dog-salmon in water is used for fastening mica on surfaces to be decorated.

Dyeing. — Young alder is used for black and red dyes. To obtain a black dye, the bark is boiled until the water gets black. Then the cedar-bark and skins to be dyed are soaked in it.

Alder-bark to be used for dyeing cedar-bark red is first chewed. Then it is rubbed in the hand, mixed with water, and after it has been rubbed well, it is thrown into a large dish. Then urine is poured upon it, which makes it thick, and brings out the dark-red color. Then it is rubbed again in the hands. Hot stones are thrown in until it is as hot as the hand will stand. Then the alder-bark is removed from the dish, and the cedar-bark which is to be dyed is rolled up in loose coils and put in. The alder-bark is spread over the coils until they are all covered with it. After it has been in the solution for a short time, the cedar-bark is rubbed as hard as possible, and it is squeezed with the hands to make sure that the fluid soaks in well. Then an old blanket is spread over the dish in which the cedar-bark is steeping, and is wetted. After a little while the fluid is poured off, and the dish is placed near the fire, leaning on its side, so that the fire strikes the wet cover. It is left there for a couple of hours, and is watched until the cedar-bark assumes a dark-red color. Then it is hung up and dried slowly. The quicker the cedar-bark dries, the darker it will be. For making cedar-bark striped white and red, those portions which are to remain white are tied around firmly with shredded bark. This protects them against the fluid, and they remain unaffected by the dye. — Cedar-bark is also dyed black by being placed in the mud of ponds.

Cedar-withes are dyed in urine. — Fresh grass is gathered in spring and rubbed on abelone-shells to give them a brighter color. Hats made of

spruce-roots are also dyed with it until they attain a light-green color, which, however, is not permanent.

Objects made of Shell. — Mussel-shells (laē′s and xo′ˢlē) are used as tweezers. They are used to scrape hemlock-sap and cedar-bark and to clean spruce-roots to be used for making baskets. Large shells of this kind are also used for scaling fish. When provided with a wooden handle attached to the concave side of the shell, they are used as knives to split salmon.

The shells of small clams (*Saxidomus*) are cut off along the convex side, and are used as spoons (see Fig. 111). The shells of large clams (*Tresus*) are used for loosening the soil in clover-root beds, for digging the sand away in clam-digging, and also for skimming fat. They are never used with handles.

Cockle-shells (dzâ′lē) are used for scraping kelp bottles (see below), and, when hafted in long handles, for skin-scrapers (see p. 400). Shells of various sizes are also used as measures for medicines. The shells of *Acmæa* (hamō′-dzɛna) are placed on the breasts of adolescent girls.

The edge of the large clam *Tresus* is used as a knife for opening clam-shells. A large shell is placed on a piece of driftwood, and the whole thick part from the hinge on is knocked off, leaving only a crescent-shaped piece of the edge, which is used as a knife (ɛlg·ayu).

Abelone-shell is used particularly for nose-ornaments. Some spoons inlaid with abelone-shell have been collected among the Kwakiutl, but these are probably of northern manufacture. Shells are also used as rattles, which are put up near salmon-weirs for the purpose of frightening away bears and wolves.

Kelp Bottles. — The best kelp (wā′wadē) for making oil-bottles grows on rocks where there is a swift tide. The kelp is collected by women in the fall, after the berrying-season is over. They go out in their canoes, carrying a long salmon-hook shaft which is made of red pine. To the end of the shaft a bone knife such as is used for splitting cedar is tied crosswise with a long strip of cedar-bark. The Kwakiutl generally go to Green Point to gather kelp for making bottles. They try to reach the place at low water. Then the canoe is anchored about ten or twelve fathoms above the kelp, which is slowly drifting with the tide. The anchor-line is slackened until the canoe is just above the kelp. Then the kelp is cut off from the rock with the bone knife attached to the pole. It is taken into the canoe, and the long leaves are cut off with another knife. This work generally takes so long that it is high water when the women get home. The kelp is dragged ashore by the head, and is placed on the beach with the head towards the house, the thin end towards the sea. Next the kelp is scraped (k·!ā′ẋwa) with a scraper made of cockle-shells. To make the scraper, a large cockle-shell is placed on a stone, and a concave section is cut out of its outer side, so that it fits as nearly as possible the rounded shape of the kelp. Then the woman sits down on the left-hand side of the kelp, looking up from the beach, and scrapes it,

beginning at the head, down to the thin end, scraping with the right hand, in which she holds the cockle-shell scraper, and holding the kelp with the left hand. While doing so, she turns the kelp around, scraping all sides, and pushes it up towards the house. The scraped kelp is called "k·owē'kᵘ." While the woman is doing this, her husband gathers fire-wood and makes a frame of hemlock-poles, on which the kelp is to be dried. This frame is put up in the house, or, if the weather is still fair, outside. It consists of two pairs of poles six metres apart, and connected on top by a cross-pole. The distance of the one pair of poles from the other pair is nearly five metres. The kelp is placed side by side over the horizontal cross-poles connecting each pair of uprights. All the heads are directed one way. Then a long fire is built under them. The man takes his place at the head-end of the kelp. The woman takes her place at the thin end of the kelp, and they watch them and pull them along over the frame, if one part of the kelp should shrink too much. The fire is kept up for about two days, until all the kelp is properly shrunk. Then it is taken down and laid out on the floor. The man next cuts some pieces of cedar-wood about 5 mm. thick and 3 mm. wide, and breaks them into pieces about 6–8 cm. long, which are thrown into a small root-basket. The man and the woman each coil up one of the pieces of kelp on the floor, so that the head lies in the middle, and the thin end on top. They each take one of the short cedar-sticks, take up the thin end of the kelp with the right, and begin to blow into it. When it is as full of air as they can get it, they close the end with the left hand and push the air down with the right hand, taking hold of the kelp between the thumb and first finger, squeezing the tube together firmly, and pushing the hand down towards the thick end. Then more air is blown in, and this is continued until the whole kelp tube is as full as possible. Then the small cedar-stick is put crosswise over the thin end of the kelp, and a few turns of the thin end are wrapped around it so as to close it tightly. Then it is tied up with a strip of cedar-bark. This makes the closure perfectly air-tight. In this way any leaks in the kelp, either made by animals that live on it or that have been made in the process of scraping, are discovered. After the stems of kelp are filled with air, those that are found to be good are taken outside on a day when the sun is shining. They are scattered in coils on the gravel above high-water mark, or are hung up on poles (see Plate XXIX, Fig. 1) and dried by the sun and wind. About noon they are turned over. When they get dry, they are quite white from an efflorescence of salt. In the evening they are gathered together and covered up with mats to keep the dew off. On the following morning they are washed with a rag of an old mat or with soft red-cedar bark dipped in salt water to remove the efflorescence. This is done as quickly as possible to prevent them from being soaked with water again. Then they are dried again above high-water mark. Next a peeled yew-wood

stake is driven into the ground on the beach, close to the place where the kelp is drying. The stake is about 60 cm. long, and it is driven about 30 cm. deep into the ground. The woman dampens the kelp with shredded cedar-bark. The cross-piece with which the kelp is tied up is cut off, and the air is let out. The husband next places the kelp around the stake and pulls it back and forth over it until all the salt comes off and it is quite soft. Then it is folded up in four turns and tied in the middle with the thin end, and is thus ready for use.

When a kelp tube is torn, it is cut off straight at both ends near the cut, and a tube cut of elderberry-wood and called ts!ē'x·mesâla (Fig. 94) is inserted. The kelp is tied firmly around the tube with split kelp. The joint is rubbed with ashes, and is then covered with spruce-gum, which in its turn is covered with pulverized coal to make it smooth.

Fig. 94 ($\frac{1}{1\,1\,1}$). Tube of Elderberry-Wood, for mending Kelp Bottles. Length, 9 cm.

Funnels (ā'nalas) for pouring oil into bottles are made of the head of a large kelp with a short piece of the stem attached. The upper part of the head is cut off, and the stem is inserted in the mouth of the bottle that is to be filled.

Kelp bottles provided with a mouthpiece of elderberry are also used for giving injections of salt water, catfish-oil, or dog-fish-oil.

Fire-Making. — Fire is made with a fire-drill, which is made entirely of cedar-wood. The drill itself is a long piece of wood a little thicker at the point than at the upper end. It is used with a hearth consisting of a long and broad piece of cedar-wood provided with a number of holes along its edge, in which the drill is twirled. A notch is cut out along the side of the hearth, and tinder made of shredded cedar-bark is kept under it, so that the sparks drop in and ignite it. Sometimes the hearth is made of a very soft driftwood, which is claimed not to be indigenous. When the shredded bark begins to smoulder, it is put into a hollow piece of stiff cedar-bark. Then it is covered with more shredded cedar-bark, and is blown upon until it bursts into flame. Rotten bark of cedar is used for starting the fire.

The best fire-wood is obtained from fallen trees that are found in the woods. These are considered better than driftwood, which, however, is generally used. Spruce-wood furnishes the best fuel, but alder is also used to a great extent. When a fire is built, one end of the logs is generally supported by a wet log or by a stone.

Particular care is taken in building fires in which stones are heated that are used for cooking. For ordinary cooking, the fire is built on the ground, generally of crossing layers of wood. Stones of about the size of a fist, preferably a tough stone that does not crumble and crack when heated and

thrown into water, are placed on top of the fire-wood. When red-hot, they are taken out of the fire with tongs. It has been stated before that red-hot stones are used for burning through wood (see p. 327). They are most extensively used for cooking.

Ovens in which roots or other food is to be prepared are made by digging a hole in the ground. The following description of an oven in which fern-root is cooked was given to me by Mr. Hunt.

She takes her yew-wood digging-stick and a large clam-shell, and she digs a hole in the corner of the house, at the place where men do not walk. The length of the hole is one fathom, and its width is half a fathom, and its depth is three spans. The hole has square corners. As soon as she has done so, she takes dry split cedar-wood and she puts it in the bottom of the hole, and she takes large pieces and puts them crosswise over these. She does not stop until the hole is full of fire-wood. Then she goes down to the beach and carries stones on her back, and pours them over the fire-wood. Thus she has made a pile of stones on the fire. Now it is ready for the next day. In the morning, as soon as day comes, she lights the fire under the stones.... Now she watches for all the stones to be red-hot. As soon as they all get red-hot, the woman takes the tongs and takes the fire out of the hole, and puts it down in the middle of the house.... Then she levels down the stones in the place where she is going to bake.

Wä, la axˢē′dxēs ʟ!ᴇ′mq!ᴇk·!ᴇnē k·!î-lā′kwa ʟᴇˢwa xā′laēsasa mᴇt!ā′naˢē. Wä, la ˢlap!ā′lîła, lāx onē′gwēłasēs g·ō′kwē lā′xa k·!ē′sē qā′yatsa bᴇgwā′-nᴇmē. Wä, la ˢnᴇ′mp!ᴇng·ᴇg·ē wā′sgᴇ-masas ˢlā′paˢyas lā′xᴇns bā′ʟax. Wä, la ˢnᴇq!ᴇbō′d lā′xᴇns bā′ʟäqē wā′dzᴇ-g·asa. Wä, la yū′duχ̣ᵘp!ᴇnk· lā′xᴇns q!wā′q!wax·ts!ānaˢēx yîx ˢwā′labᴇtālasas. Laᴇ′m k·!ᴇwᴇlχ̣ᵘstowē′da ˢlā′paˢē. Wä, g·î′lˢmēsē gwā′łᴇxs la′ē axˢē′dxa lᴇ′m-χ̣wa mᴇ′ndzaakᵘ k!waxʟā′wa qaˢs lē ʟuxts!â′las lā′xēs ˢlā′paˢē. Wä, la ax-ˢē′dxa awā′wastâla qaˢs gā′yiˢlälēs lāx ō′kwᴇyaˢyas. Wä, ā′lˢmēsē gwā′łᴇxs la′ē k·ō′t!ē ˢlā′paˢyasēxa lᴇqwa′. Wä, lē lᴇ′nts!ēs lā′xa ʟ!ᴇmā′isē qaˢs lā′xat! ō′xʟōsdēsᴇlaxa t!ē′sᴇmē qaˢs lē guqᴇ-yîndālas lā′xa lᴇqwa′. Wä, laᴇ′m t!ē′-qwabᴇkwa. Wä, laᴇ′m gwā′lała qaē′da lā′ʟa ē′t!ēdᴇł ˢnā′x·ˢîdᴇʟ. Wä, g·î′l-ˢmēsē ˢnā′x·ˢîdxa gaā′läxs la′ē tsē′na-bōtsa gu′lta lā′xēs t!ē′qwapaˢē.... Wä, â′ˢmēsē la q!ā′q!alāla qa ˢnā′χ̣wēsē la mē′mᴇnłtsᴇmx·ˢîdēda t!ē′sᴇmē. Wä, g·î′lˢmēsē la ˢnā′χ̣wa mᴇ′nłtsᴇmx·ˢîdᴇxs la′ēda ts!ᴇdā′qē axˢē′dxa k·!îpʟā′la qaˢs k·!îpwułts!â′lēxa gu′lta qaˢs k·îp!ā′lîłᴇlēs lā′xa awā′g·awalîłasa g·ō′kwē.... Wä, lē ˢnᴇmā′k·ᴇyîndxa t!ē′sᴇmē lāx ō′ts!â-wasēs ku′nyasʟē.

Slow-matches consist of ropes made of soft shredded cedar-bark, which is wound around spirally and loosely with strips of the same material. The end of this

slow-match is lighted, and the fire keeps in it for a long time. Fern-root (sā′gum) and a fungus growing on fir (mō′muχ^{u}dē) are used for the same purpose.

Torches are made of pitch-wood, which is split up and tied into bundles. These are generally used when walking at night on the street. In some traditions it is mentioned that the people go out in search of a lost person in the woods, carrying torches.[1] Torches for burning off the rough splints of the outside of canoes are made of bundles of split cedar-stick.

[1] See Vol. X of this series, pp. 433, 434.

III. — MEASUREMENTS.

Measurement of Space. — The measures all depend upon the body, the longer measurements being derived from the fathom; that is to say, the distances of the tips of the fingers of the left and right hands, the arms being held extended horizontally. Shorter measurements are derived from the span of the hand, and still shorter ones from the width of the hand and thickness of the fingers. The series of measurements of length is as follows:

k·!ō′dEn	thickness of finger from palm to back.
ˢnE′mdEn	1 finger-width.
sEg·inō′dzē	1 1/2 "
mā′ˢlɬdE′n	2 "
sā′g·inō′dzēgâla . .	2 1/2 " (literally, "one-half between two").
yū′duẋᵘdEn	3 "
mō′dEn	4 "
sEk·!ā′dEn / Lā′qwa	5 " thumb put alongside of first finger and measured across hand.
L!ā′kwa	span from thumb to first finger bent in at first joint.
sEẋᵘts!â′	from interstise between thumb and first finger to tip of first finger.
ts!Eẋᵘts!ā′nē	short span, thumb to tip of first finger.
g·î′lts!ānē bā′La	long span, thumb to tip of second finger.
Lā′qwabāla	long span and full width of hand.
L!ā′kwabāla	long span and "bent" span (L!ā′kwa).
ts!Eẋᵘts!ā′nēbāla bā′La	long span and short span.
L!ā′kwagâla bā′La . .	two spans and one "bent" span.
maˢlp!E′nk·	two spans.
hamō′dEngâla	two spans and four finger-widths.
L!ā′kwa	point of fingers to bent elbow of other arm.
ˢnEq!Ebō′t	half a fathom (literally, "middle of chest").
bā′La	fathom.
ē′sEg·u	a little over a fathom.
bā′bELâla	a little over two fathoms.
bā′bELâlasa L!ā′kwa .	two fathoms and stretch from fingers to bent elbow of other arm.

These measurements are used in all industries. The length and thickness of the stone hammer, the sizes of the box, the length of cedar-withes, —

all are measured by these means. It seems that no account is taken of the difference of these measurements in tall and short individuals.

In laying down measurements, pieces of wood are used as standards of length. For longer measurements, ropes are used in the same way. Some of the methods of measurement that are used at the present time are quite complicated. Thus in making the sides of a box, devices are employed to obtain an exact rectangular form for the side. These boxes are bent of wood, as already described (p. 342). The sides consist of a single board, which is kerfed and bent over in the kerfs so that the two ends come together. In doing this work it is necessary to lay out the sides accurately, so that they are of equal size and exactly rectangular. In preparing the board that is used for making the sides of a box, one edge is made straight by sighting along the edge and cutting off all irregularities until the straightness of the edge is satisfactory. Then the width is marked at two points with a strip of cedar-bark, and the opposite edge is marked by joining the points thus determined by a line cut along a straight-edge of yew-wood. The ends are cut as near as possible at right angles to the long edges. The rules for the sizes of the sides are as follows: If the sides of the box are to be one span high, the long side is one span and four finger-widths wide, while the short side is one span wide. If the long side is a long span (thumb to middle finger) wide, the width of the short side is the distance from the tip of the first finger to the interstice between thumb and first finger.

In laying out the sides, a strip of cedar-bark is laid lengthwise across the plank. It is divided in the middle, and thus the position of the middle of the length of the box is marked. A cross-line at right angles to the edges is marked at this point, and the middle of this line is found by measuring the total width by a strip of cedar-bark, which is then divided in the middle. Then the length of one half of the long side of the box is marked off on one of the long edges, and a small cedar-stick is laid from the centre of the line to the corner that has been marked off, and is cut off this length. Its length is therefore one-half of the diagonal of one of the long sides of the box. The three other corners of the long side are then marked off by turning this stick around the centre of the box and marking the points were it intersects with the long edges. In this way an exact rectangle is obtained. The three other sides are laid off in the same way.

After the sides of the box have been laid out, the kerfs cut, and the wood bent so that the ends of the board come together, it is necessary to make the cross-se[illegible] of the bent board exactly rectangular. This is done in the follow[illegible] Two cedar-sticks of equal length are cut, and tied together in [illegible]eir ends are pointed, so that they will fit into the angles of [illegible] As long as the box is not exactly rectangular, this cr[illegible]lel to the edge of the box, and the adjustment

is continued until the cross is as nearly as possible parallel to the upper edge of the box.

Similar methods of measuring are used in laying out the plan of a house. The houses of the Kwakiutl Indians are square (see plan, Fig. 95). In laying out a house nine fathoms square, for instance, a line running from the centre of the door back to the centre of the rear of the house is measured with a cedar-bark rope and staked off. Then the rope is middled. The half-length is staked off to the right and to the left from the middle of the front of the house. Then the distance of these stakes to the one in the centre of the rear of the house is measured, and the distances are made equal. In this way the front line is made to be exactly at right angles to the medial line. The rear corners are determined in the same manner in reference to the stake in the middle of the front of the house.

In other cases where complicated figures are to be reproduced, patterns are applied. For instance, when a heavy beam is to be placed on top of a post which is notched so as to receive the beam, an expert wood-worker makes a pattern of cedar-bark by bending a piece of bark around the beam and securing it in its curved position. Then this pattern is placed on top of the post, and the outlines of the notch are marked with a chisel in accordance with this pattern. After the pattern has been marked on one side of the post, the opposite side is marked by measuring the proper distances from the top of the post to the bottom of the groove with a strip of cedar-bark, and laying them off on the opposite side. Patterns are also used in wood-bending; for instance, bent halibut-hooks are steamed and bent in patterns, so that all those made in the same pattern have exactly the same shape. Sometimes four hooks are made in the same pattern at the same time (see p. 332).

Patterns are also used for laying off complicated painted designs. These patterns are generally cut out of cedar-bark, which may be used right and left, so that symmetrical forms of exactly the same shape can be produced.

For measuring liquids clam-shells, and for larger quantities buckets, of various sizes, are used.

Measurement of Time. — Here may be mentioned the division of the year into months. I have not been able to obtain quite satisfactory information on this point. On the whole, I have received twelve names which indicate that the name of one moon covers really two. It seems that the re-adjustment is made in midwinter. The solstice moons are called tsl!ā'tap!a, which means probably "split both ways." The knowledge of the moons seems to be disappearing, and it was difficult to obtain quite satisfactory evidence. I give here the names as obtained from several, tribes, Kwakiutl, Nakwaktokish, Mamalelekala, Nakwartok, and Koskimo — without [illegible] that the arrangement is quite accurate: —

	ˢnE′mgēs	Ma′malēleqala	Na′k!wax·daˢxᵘ	Ġō′sg·imuẋᵘ
	Q!waˢlE′nx [1] (Raspberry-Sprouting Season) *or* ˢmā′ˢwaēL!Enx (Olachen-Fishing Season)	TE′mk·!înx [1] (Tree-Sprouting Season)	Tē′kwabâˢē (Under [elder brother])	Q!E′nu (No Sap in Trees [?])
	Q!Emdzek!unx (Raspberry Season)		Ē′dabâˢē (Next one under [elder brother])	Ġō′ˢlEnx (Raspberry Season)
	Ġwā′t!Enx (Huckleberry Season)		SE′mẋ"sEm [1] (Trying-Oil Moon)	Ġwā′t!Enx (Huckleberry Season)
	NEk!u′nx (Sallalberry Season)		NE′mnâla (Sockeye Moon [?])	NEk!u′nx (Sallalberry Season)
	Wulē′ts!Enx (Season of ?)		Aā′tsaˢya (Between Good and Bad Weather [?])	MEłā′lalasġEm (Ts!ā′tap!a) (Southeast Wind Moon)
gust	XE′msxEmsdē (Past [i. e. empty] Boxes [?])		Ġō′ˢlEnx (Raspberry Season)	NE′mnâla (Sockeye Moon [?])
September	Lē′xEm (Wide-Face)		ˢnā′ˢnōlasnā′qag·ila (Eldest Brother)	ˢnō′la (Elder Brother)
October	ˢmEgwā′bâˢē (Round one underneath, i. e. Moon after Wide-Face)		Hē′lats!a (Right Moon [?])	Tē′kwabâˢē (Under [elder brother])
November	Ġwā′xsEm (Dog-Salmon Month)	Wulē′ts!Enx (Season of ?)	Xē′kwalił (Sweeping Houses, i. e. for Winter Ceremonial)	DzEẋ"dzEwī′tsEm (Pile-Driving Moon)
December	Q!ä′xˢala (Cleaned i. e. of leaves)		Mā′g·aˢya (Staying in Dance House [?])	Waˢmitsem (Fish-in-River Moon)
Winter Solstice	Ts!ā′tap!a		Ts!ā′tap!a	Ts!ā′tap!a
January	WaˢE′nx (Spawning-Season)	ˢmā′ˢwâlits!Enx (Season of Floods ?)	WaˢE′nx (Spawning Season)	Wā′łaˢwa (?)
February	Tsuẋ"sE′m (First-Olachen-Run Moon)	ˢmā′ˢmawaē′LˢEnxēˢnâ (Near to Olachen-Fishing Season)	ˢnō′la (Elder Brother)	Q!Eguẋ"LÄ′ (Nothing on it [?])

[1] First month of the count.

IV. — HOUSE AND HOUSE-FURNISHINGS.

Houses. *Permanent Houses.* — I have described the houses of the Kwakiutl Indians elsewhere,[1] so that it will be sufficient to give here a few supplementary notes. The method of laying out the plan of the house was described on p. 412. The method of raising the heavy framework has also been described.[2] The posts are placed vertical by the eye. All the notches in the posts are cut before they are erected. The side-beams on which the lower ends of the rafters rest are high and rather narrow. They are raised in the same way as the central roof-beams. The clear space between the two heavy door-posts is one fathom and one cubit. The posts stand one fathom back from the line of the house-front. The height of these posts is about two fathoms and a half above ground, and the buried portion is as long as the distance from the sole of the foot to the navel. The thickness of the beam is about five spans in front, and three spans in the rear; while among the Koskimo it is customary to place the thick end in the rear. The door-posts have also five spans diameter. The beam is so laid that its top is horizontal. The height of the ridge of the house is about three fathoms (Plate xxx).

It is claimed that the pitch of the roof of old houses was steeper than that of modern houses.

After the side-beams have been raised, and the rafters put in position, the side-walls of the house are put up. These are made of heavy planks (tsā′qEm, "plank;" tsä′gEnoē, "side-plank"). The back is either made in the same manner as the sides, or a long crosspiece is put down on the bottom, to which the boards are nailed.

Next the roof is put on. It is supported by rafters running from the ridge-beam to the side-beams, over which a number of horizontal poles are laid. The roof-boards are split so that their edges turn up. The lower roof-boards are turned concave side up, forming in this way gutters through which the rain runs off. These are placed about three finger-widths apart. Then the upper roof-boards are placed over the lower ones, convex side up, and covering the spaces between the bottom boards. The best ones are put o
the places where the seats of the families are. The ro
rest on the side-beams and form the lowest part o
fathoms long (ts!ā′ts!aẋ"sEms). Next to these, t

[1] The Social Organization and the Secret Societies of the K
Museum for 1895, pp. 316 et seq.).

[2] See p. 339.

is placed a row of roof-boards about a fathom and a half long (sē′ˢstowē). Along the ridge of the house, boards that are still shorter (mā′ẋwiˢwē) are used.

After the framework of the roof has been finished, the embankments which run around the house are built. The rear embankment is from one to two fathoms wide. The side and front platforms are a fathom or less in width. The inner wall of the embankment is formed of planks about half a fathom in width, but in some of the houses the embankments are much higher. In one house in Koskimo they are nearly one fathom high. The boards are put down edgewise, in a ditch as deep as half the width of the planks. Then the middle of the house is levelled down to the depth of this ditch, and the dirt that is thus removed is thrown behind the planks and levelled down. If there is more than is required for making the embankment, it is carried out of the house. After all this has been done, the front of the house is built.

These houses had no wooden floors. In winter the walls were sometimes covered with mats as a protection against snowdrifts.

It is claimed that no houses were erected on piles; but this is an error, since Vancouver expressly describes pile-dwellings.[1] In a tradition of the Nimkish, pile-dwellings are also distinctly mentioned.[2] Houses erected at least partly on piles occur among the more northern tribes; for instance, among the Bella Coola. Summer seats are almost always erected on piles (see Plate xxx, Fig. 1).

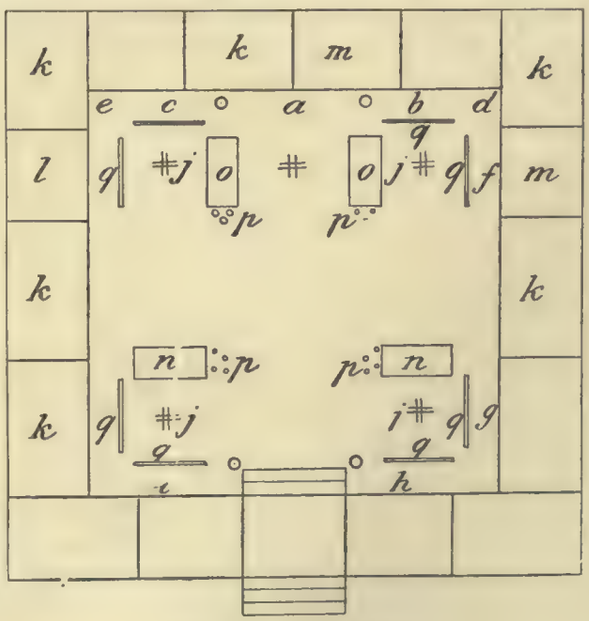


Fig. 95, Plan of House.

The parts of the house are named right and left (Fig. 95), according to the positions they have in relation to a person looking in at the door. The rear of the house is called its "forehead." Thus we have the terms ˢnEqē′walīł ("middle forehead of house") for the middle of the rear part (*a*); hëłk·!ōtē′walīł and gEmxōtē′walīł respectively for the right (*b*) and left (*c*) of the rear part; hëłk·!ōdEnē′gwīł and gEmxōdEnē′gwīł for right (*d*) and left (*e*) rear corners. The rear part of the sides (*f*) is called "up river;" the front part [illegible] sides, "down river;" and we have ˢnEłk·!ōdō′yâlīł and gwak·!ōdō′[illegible]d down-river middle of house,"

[1] Vancouver, V[illegible]

[2] F. Boas, In[illegible]

and more specifically these terms combined with hĕłk·!ōdō′yâlīł and gɛ′mxōdō′-yâlīł ("right and left sides"). Right and left sides of the door (*h*, *i*) are hĕłk·!ōtsâ′līł and gɛmxōtsâ′līł respectively. The four fires (*j*) are called accordingly right and left, front and rear, house fires (for instance, gɛmxōtē′walīł lɛgwī′ł, "left-hand rear fire"). The fire in the middle of the house, which is used at feasts, is called lɛqā′walīł.

The place of honor is the middle rear of the house, then the right side, next the left, and finally the door-side. The bedrooms (*k*) which stand on the embankments are arranged accordingly, the owner having the middle room in the rear. It is said that in former times there were no rooms in the rear, which tends to be smoky, but the owner lived on the right-hand side. In former times the doorway of the bedrooms were as low as a box. They had sliding-doors attached to a rope which passed along the walls of the house to the bedroom, in which the house-owner lived. When the rooms were closed, the door was tied to a post in this room.

For novices, hunters, and others who had to be guarded against defilement by chance contact with impure persons, or against any one stepping over their belongings, rooms were erected on a staging in the rear of the house, which were reached by a ladder that was pulled up by the occupant when he was in his room.

Fire-wood is kept between the bedrooms (*l*) and at the sides of the door. Boxes containing provisions are kept on the side and rear embankments (*m*). There are also separate sheds (g·ō′yats!ē) on the embankment, in which personal poperty is kept. Provisions that must be protected against dampness are kept on platforms of poles which are suspended from the rafters (dā′g·ilīł or q!a^{g}lī′ł). Clover-root and cinquefoil-root are kept in a deep hole made under the settee near the fire. This hole is about one metre wide and two metres long, and is lined with fern-leaves, on which the basket containing the clover and cinquefoil-roots are placed.

In the house are kept also the long frames on which berries, salmon-roe, etc. are dried. These will be more fully described in connection with the treatment of food.

There are seats on three sides of the fire. The seat of the housewife is generally in the rear of the front fires (*n*) and on the medial sides of the rear fires (*o*). Her cooking-utensils (*p*) stand on the left-hand side of her seat. The other seats (*q*) are generally so arranged that the medial side of the front fires is open, while the front side of the rear fires is open. The seat for guests is opposite that of the housewife. The seats are either settees (see Fig. 113) or planks supported by [illegible] given into the ground so that they slant slightly backward, and m[illegible] placed in front of these. The divisions of the house are [illegible]s hung from horizontal poles which are tied t[illegible] of the house.

During the celebration of festivals all these divisions, the family fires and the family seats are removed.

In olden times houses with many embankments (tsō'yagik) were also built. The platforms were covered with planks, and only the fireplace in the middle of the house remained free. These houses must have been quite similar to those of the Haida and other northern tribes.

Temporary Houses. — The houses in Knight Inlet, which are occupied only during the olachen-fishing seasons, are built like winter houses, but they are only about two fathoms square and a fathom and a half high. The roof-boards for these houses are brought along in the canoes of the fishermen. Often they travel on rafts made of two canoes tied together. Then these boards form the platform of the raft. The sides of the houses are made of old mats. The beds, which are made of grass spread over boards, are at the sides. The man sleeps on one side of the door, his wife on the other side. Houses of similar kind are used by clam-diggers.

In bad weather, hunters will sometimes build small houses for their protection. A framework is put up similar to that of the permanent house; the side-posts being about one metre high, the middle post about a metre and a half high, and the beams about three metres long. The width of the house is about the same. Then pieces of cedar-bark are placed on the roof, the under row with the sap-side up. The joints of this row are covered with pieces with the sap-side down. Then a fire is built under this shelter; and as soon as the cedar-bark becomes hot, it begins to curl, and the upper piece hooks firmly into the turned-up rim of the lower piece. The sides are left open.

Another kind of shelter is built over a similar frame, only with a steeper roof-frame, which is covered with four or five layers of spruce-branches.

The shamans of the Koskimo build a shelter with a steep roof made of four or five layers of spruce-branches, like a hunter's shelter. The ground is covered with the same kind of branches, which are so arranged that the tips are at the place where the men lie down.

When sea-hunters are overtaken by bad weather, they will turn the canoe upside down and use it as a shelter.

Women who go berrying, and hunters, may also protect themselves by building a lean-to. A number of poles are laid against a low horizontal branch of a tree, and are than covered with matting.

Household Utensils and Furnishings. *Boxes, Baskets and Bottles.* — For keeping provisions, blankets, and other valuable property, large boxes are used, the sides of which are bent of cedar-wood, as described before (see pp. 331, 342). The old type of box is represented in Fig. 96. The peculiar designs on the sides of this box are all made by adzing, only the upper rim is carved. The carving is confined to the front of the box and to the front part of the one side shown in the illustration. The type of modern

boxes is shown in Fig. 97. All these are made in the same manner a described before. The top has always the characteristic high edge shown in Fig. 97, *a*. The boxes are always tied up with cedar-bark netting, as shown in the same figure. The upper loops of this netting serve for tying the top down. Some of the carefully made old boxes have a curved top like the one shown in Fig. 97, *b*. The sizes of these boxes differ considerably, according to their use. Some are quite large, about 80 cm. high, while others are only 15 cm. high. Small boxes

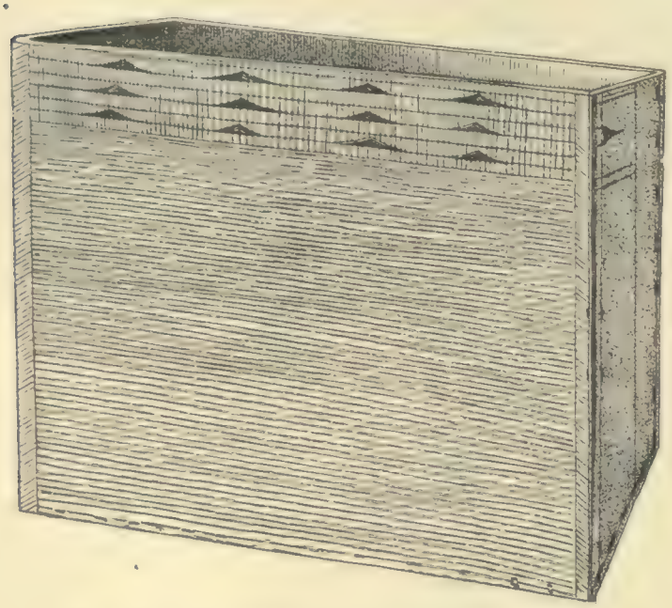


Fig. 96 ($\frac{1}{8}\frac{6}{7}$). Ancient Type of Box. Height, 67 cm.; length, 71 cm., width, 46 cm.

Fig. 97, *a* ($\frac{1}{12}\frac{6}{5}$), *b* ($\frac{1}{8}\frac{6}{5}$). Small Boxes. Height, 29 cm., 25 cm.; length, 30 cm., 25 cm.; width, 30 cm., 20 cm.

of this kind are used as work-boxes, for keeping small household utensils, etc.

Open boxes almost square in cross-section, and somewhat higher than the storage-boxes just described but similar to the cooking-boxes, are often used for work-boxes. The top of two opposite sides is generally curved (Figs. 98, 99), and the upper part of the better class of these boxes is painted. They are provided with a top made of basketry.

Large cedar-bark baskets also serve for keeping dried provisions and clothing in (Fig. 100). These have a square bottom and are quite large. One of them measures 53 cm. by 40 cm., and 40 cm. in height. Another measures 53 cm. by 35 cm. and is 35 cm. high. The top of this kind of basket is always made with a strong rope of cedar-bark and the open meshes

described before (see p. 392, Fig. 84). These meshes serve to pull cedar-bark rope through, by means of which the full basket is laced up.

Most kinds of winter provisions are kept in boxes, but sometimes dried salmon and other staple foods that are kept without difficulty are placed in cedar-bark baskets. Herring-roe is always kept in large baskets.

Olachen-oil (ʟ!ē′ᵋna), dog-fish-oil (xu′lq!wēs), and oil made of seal (mē′gwat!ēs), porpoise (k·ō′lōt!ēs), whale (gwē′g·īs), and bear (ʟɛ′ntsēs), are also kept in kelp bottles. Catfish-oil (dzē′k!wīs) is kept in small kelp bottles. The method of filling and keeping the kelp bottles may be described here. First a small amount of oil is poured into the small end.

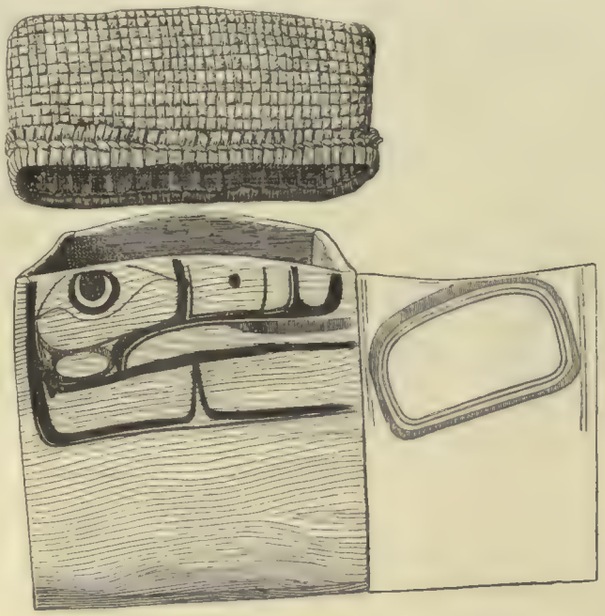


Fig. 98 ($\frac{16}{7144}$). Woman's Work-Box. Height, 23 cm.; length, 21 cm.; width, 21 cm. The extension to the right represents the side of the box.

Fig. 99 ($\frac{16}{8087}$). Woman's Work-Box. Greatest height, 39.5 cm.; length, 33 cm.; width, 27.5 cm. The extension to the right represents the sides of the box.

This is pushed down between the fingers to the closed end of the bottle, and then it is pushed back again and poured out. This is to remove the peculiar taste of the kelp, and the bottle is cleaned out thoroughly in this manner. Generally the oil is poured in through a funnel (see p. 407), being dipped out of the kettle with a large clam-shell, the contents of which are poured into the bottle by letting the oil run along the finger. In filling the bottle, the oil is always pushed down to the closed end with the hand. The mouth of the bottle to be filled is held about a metre above the ground. The woman who fills in the oil generally sits on a box. When the bottle is full, the mouth is twisted and tied up with cedar-bark. The bottles are kept in a box (q!a'lwas, "coiled into"), the bottom of which is covered with mats, and in the middle of the box a large clam-shell is placed. The kelp bottles are coiled up in the box, the mouth lying in the centre, just over the clam-shell; so that if they should leak, the oil would collect in the shell. A large box will hold as many as twelve bottles. The oil should keep sweet in the bottles; but if they are not carefully washed out, the oil will take the taste of the kelp. Then it is generally sold to other tribes who are short of oil.

Fig. 100 ($\frac{16}{1501}$). Storage-Basket. Heigth, 39 cm.; length, 58 cm.; width, 36 cm.

When the oil-bottle is empty, it is heated over the fire, so that all the the grease melts. Then it is pulled firmly over the edge of a small box, beginning at the closed end, and pressing it down against the edge with the palm of the hand. This is continued until all the oil is squeezed out (dɛna'). After this procedure, they are perfectly dry inside. They are folded again and put away in a dry box. When kelp bottles get moist, they begin to rot: therefore they are always kept near the fire.

Spoons are kept in open-work baskets, which have been described (see Fig. 83, p. 390). Small cedar-bark pouches (Fig. 101) serve for keeping ornaments, and other valuable objects.

Food and Water Receptacles. — Ordinary food-dishes are carved out of a single block of wood, and have the characteristic form shown in Fig. 102. The smallest kind ($\frac{16}{8244}$) are only 28 cm. long, while the longest dishes measure 76 cm. in length. They all have the same characteristics of form. The bottom

is flat, and the ends curve up somewhat towards the point, and are flattened. Often the outer sides are set off sharply from the narrow ends, and bulge very considerably in the middle of the sides of the dish, where they are lowest. The outside is generally adzed off somewhat irregularly; and three or four grooved lines, according to the size of the dish, run along the upper outer rim. The edge in almost all the specimens shows groovings in a transversal direction, although in some the long sides of the rim are rubbed down so that they show no adzing, while in others designs are made along the edge by an alternation of grooved parts and smoothed parts (Fig. 102, *d*). On the inner side the ends form a sharp angle with the sides, and the inner side of the ends shows dinstinct grooving. This is generally continued over about one-fourth of the bottom of the dish, where it is sharply set off from the middle part by a straight transversal line. The middle part is either left smooth or grooved diagonally. In old specimens the edge is often set with opercula, the place of which is taken in modern specimens by brass-headed tacks.

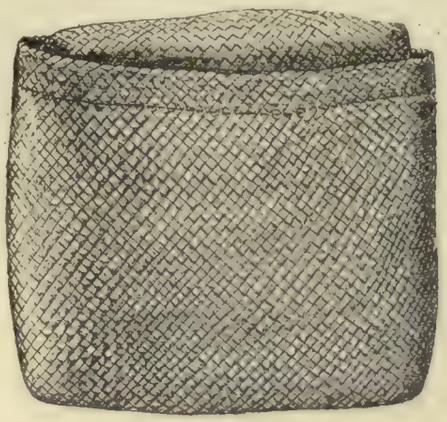


Fig. 101 ($\frac{16}{1174}$). Cedar-Bark Pouch. Height, 14 cm.; length, 15 cm.; width, 4 cm.

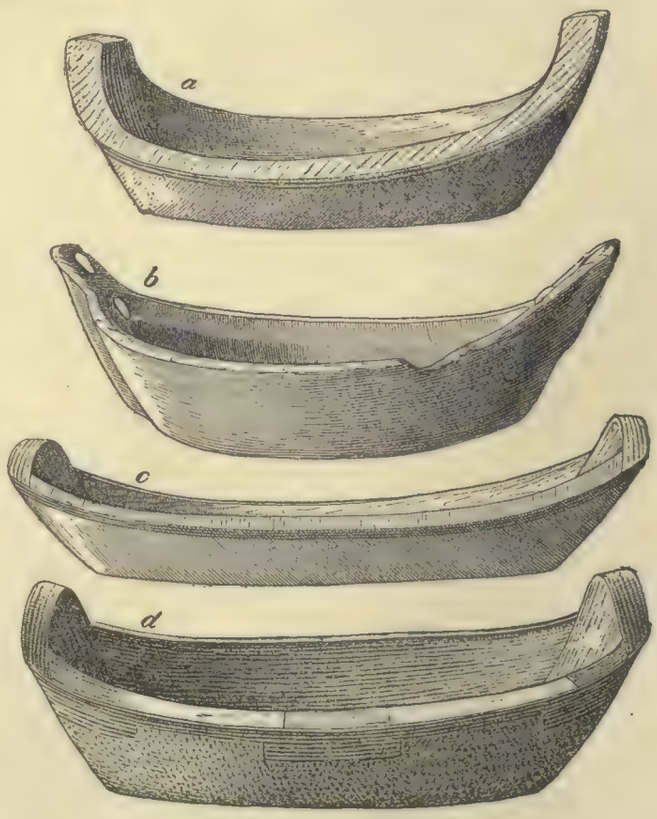


Fig. 102 *a* ($\frac{16}{1174}$), *b* ($\frac{16}{1251}$), *c* ($\frac{16}{1251}$), *d* ($\frac{16}{1174}$). Food-Trays. Length, 33 cm., 35 cm., 30 cm., 69 cm.

Small dishes of this kind are used by a single person or by husband and wife, while large dishes are used by as many as three people at a time, all three sitting in front of the dish. For children very small dishes with thick walls are used.

Oil-dishes called dzɛba'tslē (Fig. 103), which are used for dipping dried halibut and salmon in olachen-oil, are similar in form to the large trays

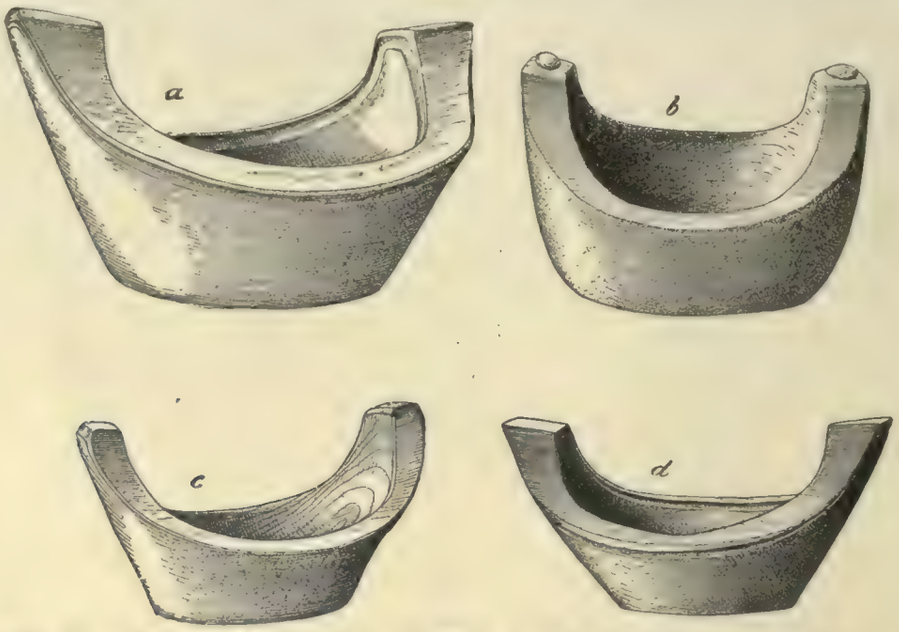


Fig. 103, *a* ($\frac{1}{5}\frac{6}{7}$), *c* ($\frac{1}{12}\frac{6}{7}$), *d* ($\frac{1}{8}\frac{6}{7}$). Oil-Dishes. Length and height: *a*, 19 cm., 10 cm.; *c*, 12 cm., 6 cm.; *d*, 19 cm., 9 cm.

just described. Some of them are as short as 11 cm. They are correspondingly wider than the large dishes, the inner bowl being sometimes nearly square. I have also found a single shallow oil-dish made of mountain-goat horn (Fig. 104).

Bent boxes are also sometimes used as dishes (Fig. 105), particularly for holding water. Dishes of this kind are used, for instance, by the mat-maker to keep water in with which the cedar-bark is kept moist. The type of these dishes resembles somewhat the type of the bucket, but the

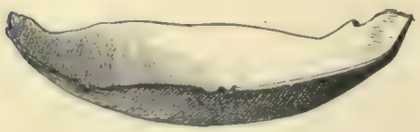


Fig. 104 ($\frac{1}{8}\frac{6}{8}$). Oil-Dish made of Horn. Length, 15 cm.

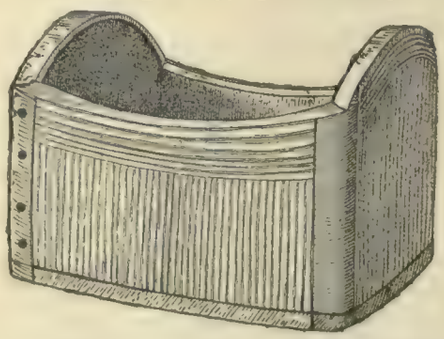


Fig. 105 ($\frac{1}{8}\frac{6}{8}$). Food-Box. Greatest height, 14 cm.; length, 19 cm.; width, 16 cm.

high ends are much more strongly curved than the ends of the bucket.

The bucket also consists of a box, two opposite sides of which generally show a slight curve upward (Fig. 106). These buckets also vary considerably in size. Large buckets, about 40 cm. high, are used for carrying water in

the house, while small drinking-buckets are only from 10 cm. to 15 cm. high at the corners.

Open boxes are used for boiling food. These are rather high. The sides are bent in the usual way, and the surface is fluted horizontally except a narrow rim all around each side. When in use, these boxes are half filled with water, then red-hot stones are thrown in with fire-tongs, and the water is brought to a boil.

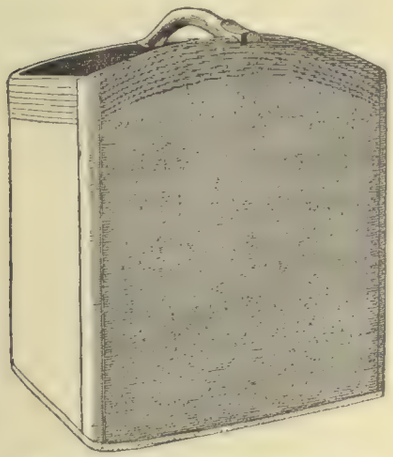


Fig. 106 ($\frac{1}{2}\frac{6}{4}\frac{6}{3}$). Bucket. Height, 25 cm.; length, 19 cm.; width, 19 cm.

Fig. 107. Wooden Spoons. *a* ($\frac{1}{2}\frac{6}{1}\frac{6}{2}$), *b* ($\frac{1}{2}\frac{6}{2}\frac{6}{3}$), *c* ($\frac{1}{2}\frac{6}{2}\frac{6}{6}$), *d* ($\frac{1}{2}\frac{6}{6}\frac{6}{7}$), *e* ($\frac{1}{2}\frac{6}{2}\frac{6}{1}$), *f* ($\frac{1}{2}\frac{6}{2}\frac{6}{4}$). $\frac{1}{4}$ nat. size.

Three kinds of spoons are used, — wooden spoons carved of alder, hemlock, or yew wood (Fig. 107), spoons made of the horn of the mountain-goat (Fig. 108), and shell spoons. The form of the spoon depends upon its use. Men's spoons are large; while those used by girls, particularly by girls belonging to the nobility, are shallow and sharp-pointed, because it is considered bad manners for a young girl to open her mouth wide. The illustrations show that the form of the spoons is fairly uniform. The principal differences in type are in the form of the handle. While most of the wooden spoons have the flattened off on the upper side (Fig. 107), most of the horn spoons have

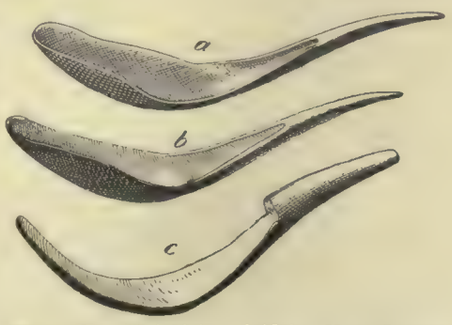


Fig. 108, *a*, *b* ($\frac{1}{2}\frac{6}{2}\frac{6}{5}$), *c* ($\frac{1}{2}\frac{6}{2}\frac{6}{0}$). Horn Spoons. $\frac{1}{4}$ nat. size.

the tip of the horn for the handle (Fig. 108). I have not made particular inquiries regarding the method of making horn spoons, but probably these were made in the same manner as the horn spoons of the northern Indians, the horn being split, steamed, and pressed in a mould while hot.

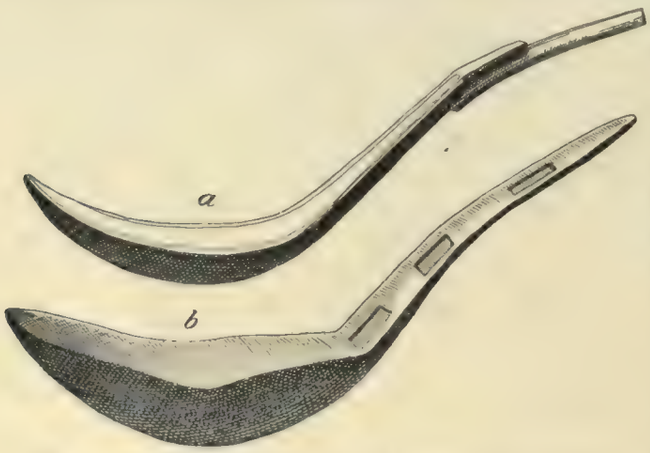


Fig. 109, *a* ($\frac{1}{12}\frac{6}{01}$). Wooden Spoon; *b* ($\frac{1}{12}\frac{6}{07}$). Horn Spoon. Length, 33 cm., 23 cm.

A very well carved spoon mode of yew-wood is shown in Fig. 109, *a*. In the same figure is shown a horn spoon which was inlaid with abelone-shell. This specimen is probably of northern manufacture. There is also a spoon made of mountain-sheep horn in the collection, which was probably made by the inland tribes northeast of the Gulf of Georgia (Fig. 110). The Koskimo, and in olden times presumably other Kwakiutl tribes also, use shell spoons very extensively (Fig. 111). These are made of the shells of *Saxidomus*, the outer edge of which is ground off. Sometimes carved horn spoons made by the tribes of northern British Columbia are also found among the Kwakiutl, but these are rather rare. All kinds of spoons are kept in spoon-baskets (see p. 420), each of which holds from twenty to twenty-four spoons.

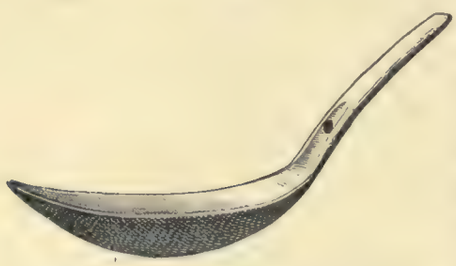


Fig. 110 ($\frac{1}{12}\frac{6}{08}$). Spoon made of Horn of the Big-Horn Sheep. Length, 18 cm.

Large long-handled ladles are used almost exclusively at feasts, and most of them are elaborately decorated. These will be described later on.

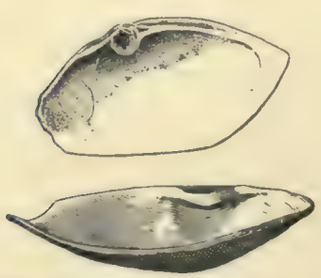


Fig. 111 ($\frac{1}{11}\frac{6}{07}$). Spoon made of Clam-Shell. Top and side views.

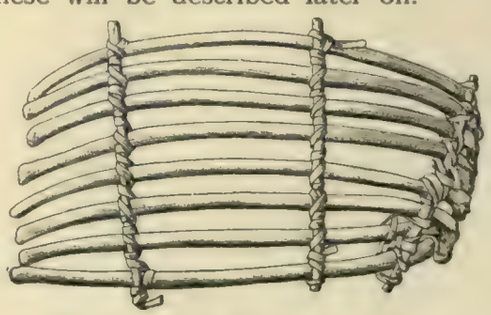


Fig. 112 ($\frac{1}{8}\frac{6}{07}$). Strainer made of Ribs. Length, 17 cm.

For lifting fish and meat out of the kettle, the Koskimo use strainers made of rib-bones of the seal, which are tied together along three sticks (Fig. 112).

Arrangement of Living-Rooms. — The general arrangement of the fireplaces and the settees around the fireplaces has been described before. The family seat consists often of a large settee (Fig. 113), which is generally carved with the emblems of the family. On the other sides of the fire, planks are spread on the floor; while the back-rest is formed by a plank which rests against two or more short posts driven into the ground, leaning slightly backward from the fire.

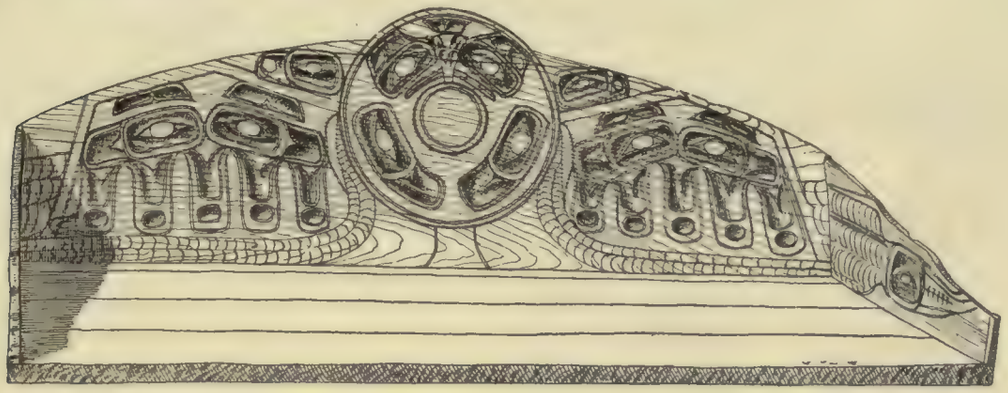


Fig. 113 ($\frac{1}{8}\frac{8}{4}\frac{1}{3}$). Settee. Length, 242 cm.; width, 98 cm.; height of back, 74 cm.

When these settees and planks are used, mats are spread over them. The settee-mats are almost all diagonal mats. Those used by a single person are almost square, and when in use are doubled over in the middle. When friends are invited in, a single long mat is spread for them, which is also doubled over, and is wide enough to afford a comfortable seat for the people, who sit leaning back, with the knees drawn up. Another kind of seat used in the house is the wood-carver's working-chair (t!ē'x·dzᴇ^{s}was), which is made like a settee, but so narrow that the person sitting in it with knees drawn up rests his elbows on the sides of the chair. The same kind of chair is used by the cannibal in his ceremonial purification when he must sit for a long time without moving.[1] The bare floor of the house serves as fireplace. Generally a few stones are put on one side so as to keep the logs in a slanting position and to insure a draught from below. The housewife generally has a small food-box at hand for every-day use. Berries, clover-root, and dried salmon are kept in it. A kelp bottle containing olachen-oil is kept by the side of the box. The box is generally filled in the evening, and the food is used on the next morning. A number of implements are always kept near the seat. These are the stone hammer, house wedges for splitting fire-wood, and formerly the fire-drill, hand-tongs of two sizes for handling the fire and hot stones, a dish with water into which the tongs are immersed every time before they are used, stones for cooking, and pointed tongs for roasting. A long pole for

[1] Compare F. Boas, Secret Societies, etc., p. 537.

pushing the roof-boards aside is also kept near at hand. In the evening, when people retire, the roof-boards are closed with this pole. As soon as the fire is started, the roof-boards over it are pushed aside, and a temporary smoke-escape is made in this manner. Small buckets are also kept near by.

There are a number of coarse mats on which kettles and dishes are placed. Another coarse mat of cedar-bark, woven with strands parallel to the edges, is used for all kinds of dirty work. Some soft shredded bark of the red cedar is kept in pouches and used as towels.

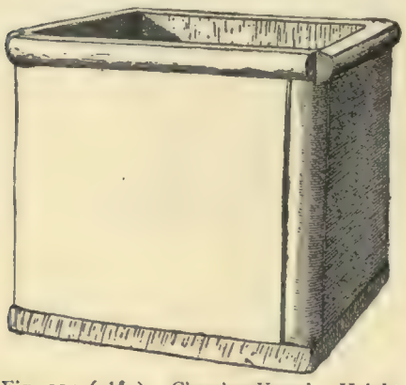


Fig. 114 ($\frac{1}{11}\frac{6}{7}_{0}$). Chamber-Vessel. Height, width, and length, 13 cm.

Open-work mats serve as dish-mats. The common dish-mat is 80 cm. long and about 25 cm. wide. When in use, it is doubled up crosswise. Dried salmon and similar kinds of food are served simply on these mattings.

The bed consists of cedar-branches which are covered with deer-skin, the tail-end of which is placed at the head-end of the bed, so that the hair runs upward. Otherwise the sleeper glides down. Mountain-goat skins and bear-skins are used as quilts. Pillows are made of skin filled with the down of the sea-parrot. These are considered very expensive, and poor people used down of ducks and geese instead. Small square boxes (Fig. 114) with wide rim serve as chamber-vessels.

V. — MEALS.

It has been stated that the housewife sits on one side of the fire, her cooking-utensils standing on her left. After the meal has been cooked, she spreads a food-mat before her husband and guests who may be present, and the food is served. Dry food is simply put down on the food-mat, while liquid or mushy dishes and such as consist of small fragments are served in food-trays. When olachen-oil is served with the food, it is placed in small oil-dishes (dipping-dishes), which are placed in the inside of the food-trays, on the side away from the person eating. Then the housewife herself, or one of her children, draws fresh water, which is offered to the guests in small drinking-buckets, out of which they drink from one corner. At breakfast the guests first rinse their mouths. Then they drink. After drinking they eat. Then the housewife, or one of her children, draws fresh water, and the guests drink again.

In eating with a spoon, the people squat down, the right elbow resting on the right knee (Plate xxxi). The food is taken up on the point of the spoon, and is sipped. After eating, most people dip the point of the spoon in water that is passed about. Then the spoon cannot be used for purposes of witchcraft.

While eating, the left hand is kept under the blanket. It is considered improper to eat with both hands.

Noblemen, and particularly girls of noble descent, must not eat much. When eating, they hardly open the mouth. They use pointed spoons, from which they sip. They must not show their teeth when chewing. Girls, while eating, must look into the fire and avoid looking about in the house.

When the food that has been served is eaten with the fingers, rubbed shredded cedar-bark is passed about, with which the guests clean their hands. Then trays filled with water are passed about, and the guests wash their hands, and dry them by the fire or with some clean shredded cedar-bark. Finally they drink some more water which is passed about.

It is considered improper to drink water during meal-time. Therefore people who stand on their dignity, like middle-aged men and members of the nobility, do not eat certain kinds of food that irritate the throat and induce spells of coughing. Thus roasted salmon-backs are eaten only by young men. I received the following remarks on this subject: —

There is always a bucket of water standing in front of those who are eating the roasted salmon-backs; for, as

Wä, la hē′mɛnīl^{ɛ}ɛmxat! ha^{ɛ}nē′ła nā′gats!ē lāx ʟ!ā′sɛx·ts!amâlīłtsa ha-^{ɛ}mā′pxa ʟ!ō′bɛdzowē xā′k·!adzâ, qa^{ɛ}s

soon as those who are eating it get choked, they take some water and wash down what chokes them.

After they have finished drinking, they eat again of their food; and when they are again choking, they wash it down again; and they only finish drinking when they are all satiated. They do this way only for brittle roasted salmon-backs; and also (only) young men eat it, for the young men do not care; and those who have a man's mind would not do this in this manner when they get choked, for they would be ashamed to show that they are choking, for, if they should get choked, they would have to drink water in the middle (of the meal) before they finish eating. Then they would at once promise a potlatch. Therefore they would rather choke to death.

g·î'l^{s}maē ^{s}mEk·!Exō'wēda ha^{s}mā'paqēxs la'ē hë'x·^{s}idaEm tsä'x·^{s}id lā'xa ^{s}wā'pē qa ^{s}mEkwā'xēs ^{s}mEk·!Exā'wa^{s}yas.

Wä, g·î'l^{s}mēsē gwāł nā'qaxs la'ē ē'tlēd hamx·^{s}î'd lā'xēs ha^{s}ma'^{s}ē. Wä, g·î'l^{s}Emxaā'wisē ē'tlēd mEk·!Exō'nukuxs la'ē ē'tlēd mEkwā'xōda. Wä, ā'ł^{s}mēs gwāł nā'qaxs la'ē ^{s}wî'^{s}la pō'ł^{s}îda. Wä, lē'x·aEm hë gwē'g·îlag·iła tsō'sa L!ō'bEdzō xā'k·!adzâ. Wä, hë'^{s}mēsēxs ha^{s}yā'ł^{s}aēda ha^{s}mā'qaq, qaxs k·!eâ'saē awî'lag·î'lasō^{s}so ha^{s}yā'^{s}l^{s}a; la k·!eâ's gwē'x·^{s}îdaats hë gwē'g·îlēda wunE'mtEläs nâ'qa^{s}ēda bEgwā'nEmaxs ^{s}mEk·!Exâ'ē, qaxs mā'x·ts!aē awE'lx·i^{s}yaxs ^{s}mEk·!Exâ'ē, qaxs g·î'l^{s}mēlaxē mEk·!Exâ'lax, wä, lā'laxē nā'goyōdExs k·!ē's^{s}maē gwāł ha^{s}mā'pa. Wä, hë'x·^{s}idaEmlaxwisē, g·ē'qEmx·^{s}îdlax. Wä, hë'^{s}mis lā'g·iłas wā'x·mōtaEm ^{s}mEgwā'lisEmē.

The housewife herself does not eat until her husband or her guests have nearly finished their meal. When the guests have finished, she takes the dishes back and cleans them. When guests have been invited, larger dishes are used.

As long as there are not more than four men present, the procedure is about the same as at a family meal, and the woman passes the food-trays and the water about. When there are as many as six guests, the meal is more formal. The guests are given a drum. The man highest in rank sits in the middle, and the others according to rank, at his right and left sides. The person who sits at the righthand end of the row of guests has the drum. Before the meal a number of songs, not less than four, are sung. The singing is accompanied by beating of the drum and by hand-clapping of the guests. At small feasts of this kind the host himself passes the dishes about and draws water, while his wife attends only to the cooking. When the guests have finished eating, they take the rest of the food home to their wives and children.

I will insert here a few characteristic descriptions of meals. The first is a description of the cooking of quarter-dried salmon. After an account of the manner in which the woman prepares the meal, the description continues: —

And after she has done so, she puts (the food) in front of the one to whom she is going to give breakfast. Then she takes water and gives it to the one to whom she gives breakfast. Then the man takes the water and rinses his mouth; and after he has done so, he drinks of it. Then, after he has finished, he begins to eat the quarter-dried salmon with oil poured on it; and after he has eaten, the woman takes some rubbed shredded cedar-bark and gives it to the man to wipe his hands with, for there is really much oil on his hands; and after he has wiped his hands, the woman pours some water into another dish, and she puts that down before the man, and he washes his hands; and after he has done so, he dries his hands by the fire of her who gave him food. When his hands are dry, the woman takes some water and gives it to him, and he drinks much of it. That is all about the quarter-dried salmon.

Wä, laE'm gwā'łExs la'ē k·ā'x·ts!amōts lā'xēs gaā'xstalamā'tsE^{s}wē. Wä, laEm-^{s}xaā'wisē ax^{s}ē'dxa ^{s}wā'pē qa^{s}s lē ts!âs lā'xēs gwā'xstalamā'tsE^{s}wē. Wä, laE'm ax^{s}ē'dēda bEgwā'nEmaxa ^{s}wā'pē qa^{s}s ts!Ewē'L!Exōdēs. Wä, g·î'l^{s}mēsē gwā'-łExs la'ē hamx·^{s}ī'da, lā'xa k!u'nq!EgEkwē dzē'dzEłamāla. Wä, g·î'l^{s}mēsē gwāł ha^{s}mā'pExs la'ēda ts!Edā'qē ax^{s}ē'dxa q!ō'yaakwē k·ā'dzEkwa qa^{s}s ts!â'wēs lā'xa bEgwā'nEmē qa dēdEx·ts!ānEnda-yâs qaxs â'laē q!ē'nEmē q!E'lq!Elts!ā-na^{s}yas. Wä, g·î'l^{s}mēsē gwāł dē'dEx·-ts!ānaxs la'ēda ts!Edā'qē guxts!ō'tsa ^{s}wā'pē lā'xa ō'gu^{s}lamē łō'q!wa qa^{s}s lē k·ā'x·tsamōts lā'xa bEgwā'nEmē. Wä, laE'm ts!E'nts!Enx^{s}wēda. Wä, g·î'l^{s}mēsē gwā'łēq la'ē pē'pEx·ts!ānax·^{s}īd lā'xa lEgwī'łasēs ha'^{s}maasē. Wä, la lE'mx-^{s}wīdē ē'^{s}ē^{s}yasâ's la'ēda ts!Edā'qē ax^{s}ē'd lā'xa ^{s}wā'pē qa^{s}s lē tsä'x·^{s}īts lāq. Wä, laE'm q!ē'k·!Es nā'x^{s}īd lāq. Wä, laE'm gwāł lā'xa dzē'dzEłamāla.

Another description is that of a family breakfast. First the preparation of the food by the housewife is described.

After she has done so, she places it before him who is going to eat. The woman spreads the dish-mat and puts the dish on it, and then she puts it before him who is going to eat. Then she puts the oil-dish down inside of the dish, away (from the one who eats); and as soon as all this has been put down, the woman draws water and gives it to the one who is going to eat; and the one who is going to eat takes the bucket of water and takes a mouthful of it and rinses his mouth; and after he has rinsed his mouth, he

Wä, g·î'l^{s}mēsē gwā'lExs la'ē k·ax·-ts!amō'ts lā'xa ha^{s}mā'pLaq. Wä, la-^{s}mē'da ts!Edā'qē LEp!ā'lîłaxa hë'łExstā-lîłē łē'^{s}wa^{s}ya. Wä, lā'wisḷa k·ā'g·îlîłxa łō'q!wē qa^{s}s lēk·ā'x·ts!amōts lā'xa ha-^{s}mā'pLaq. Wä, lā'xaē k·ā'x·^{s}îtsa dzE-ba'ts!ē lāx L!ā'sa^{s}yasa łō'q!wa. Wä, g·î'l^{s}mēsē ^{s}wī'lg·alîłExs la'ē tsä'x·^{s}îdēda ts!Edā'qaxa ^{s}wā'pē qa^{s}s lē ts!âs lā'xa ha^{s}mā'pLē. Wä, lē'da ha^{s}mā'pLē dā'x·-^{s}îdxa k!wa^{s}stats!â'la ^{s}wā'pa qa^{s}s ha'm-sgEmdē lāq qa^{s}s ts!Ewē'L!Exōdē. Wä, la gwāł ts!Ewē'L!ExōdExs la'ē nā'x^{s}īda. Wä, g·î'l^{s}mēsē gwāł nā'qaxs la'ē hamx·-

drinks; and when he finishes tirinking, he eats.... When he has finished eating, she washes the dish. As soon as it is clean, she pours water into it, and she takes it back and places it before the man. Then he washes his hands in it. As soon as he has finished, he dries his hands by the fire, so that his hands become dry; and after he has done so, he goes back and sits down.

ᵍī′da.... Wä, la gwāł hamx·ᵍī′dɛxs la′ē ts!ō′xwɛg·îndxa łō′q!wē. Wä, g·î′lᵍmēsē la ë′g·ig·axs la′ē qapts!ō′tsa ᵍwā′pē lāq. Wä, la ẋwē′laqa k·ax·ts!amō′līłas lā′xa bɛgwā′nɛmē. Wä, laɛ′m ts!ɛ′nts!ɛnẋᵍwīd lāq. Wä, g·î′lᵍmēsē gwā′ła la′ē pē′pɛx·ts!ānɛnd lā′xa lɛgwī′łē qaᵍs lɛ′mlɛmẋᵘts!ānax·ᵍīdē. Wä, g·î′lᵍmēsē gwā′łɛxs la′ē ẋwē′laqa k!wā′g·alīł.

When a family has a supply of fresh provisions, visitors will sometimes drop in of their own accord to get a taste of the food. When middle parts of salmon have been dried by a family, the housemates will appear to get a meal. This was described to me as follows: —

Now I will talk about the way in which she gives it to eat to her housefellows. When the men come, they sit down near the woman who, as they know, owns middle-parts (of salmon). Immediately the woman takes a mat and spreads it at the place where she thinks the men should sit when she gives them to eat. After she has spread the mat, she requests the men to move away from the place where they had been sitting, and sit down on the seat-mat that has been spread out. The men rise at once and sit down on the mat that has been spread out.

Wä, laᵍmē′sɛn gwā′gwēx·sᵍālał lā′qēxs la′ē haᵍmg·ī′layō lā′xa ᵍnɛmā′ēłwutē. Wä, hë′ᵍmaaxs g·ā′xaē k!wā′g·alīłēda bɛgwā′nɛmē lā′xa ts!ɛdā′qē, yîqē′xs q!ā′łē axnō′gwatsa q!ā′q!aq!aᵍē. Wä, hë′x·ᵍidaᵍmēsa ts!ɛdā′qē axᵍē′dxa łē′ᵍwaᵍē qaᵍs lɛp!ā′līłēs lā′xēs gwôᵍyō′wē qa k!waē′latsa bɛgwā′nɛmē qō haᵍmg·ī′lasōᵍlō. Wä, g·î′lᵍmēsē gwāł lɛp!ā′līłxa łē′ᵍwaᵍyaxs la′ē axk·!ā′laxa bɛgwā′nɛmē qa lē′qwalīłēs lā′xēs g·î′lx·dē k!wā′g·alīlasa qa lēs k!wa′dzōlīłxa k!wa′ēᵍ łē′ᵍwēᵍ la lɛbɛgwī′lkwa. Wä, hë′x·ᵍidaᵍmēsa bɛgwā′nɛmē ḷā′ẋulīł qaᵍs lē k!wadzō′līłxa la lɛbɛgwī′ł łē′ᵍwaᵍya.

When there are four guests the procedure is similar to those just described: —

(And after she has done so,) she takes a food-mat and spreads it in front of those to whom she is going to give to eat. After she has done so, she takes up the dishes and puts them down in front of the four men, and the woman tells each two of them to eat out of one dish. Thus she says when she takes two oil-dishes and puts

(Wä, g·î′lᵍmēsē gwā′łɛxs) la′ē axᵍē′dxa haᵍmadzō′wē łē′ᵍwaᵍya qaᵍs lē lɛp!ā′līłaq lāx l!ā′saᵍyasēs hamg·ī′lasōlē. Wä, g·î′lᵍmēsē gwā′łɛxs la′ē k·ā′g·îlīłxa łēłō′q!wē qaᵍs lē k·ā′x·ts!amōts lā′xa mō′kwē bē′bɛgwā′nɛma. Wä, la hë′ᵍmēda ts!ɛdā′qē ᵍnē′k·a, maē′maᵍłɛlas lā′xwa ᵍnā′łᵍnɛmēxlax łō′q!wa, ᵍnē′k·ēxs la′ē axᵍē′dxa dzēdzɛba′ts!ē mā′ᵍłɛxla

one into each dish at the far side (from the eaters). Then the woman takes water and gives it to those who are going to eat. The men rinse their mouths; and after they have rinsed their mouths, they drink water; . . . and when they have nearly finished eating, the woman draws fresh water, for, as soon as the men have finished eating, the woman gives them fresh water. Then the woman takes the dishes and the oil-dishes to the place where she sits.

When the man inviies six friends, as soon as he comes home, he tells his wife about having invited his six friends. His wife at once takes a mat and spreads it out in the rear of the fireplace. As soon as she has done so, the man goes again (to call) his friends; but he does not stay long before his friends come in. Then the woman leads them up to their seats, to the place where the mat has been spread. Immediately they sit down on the mat. Now, six men are enough to sing. Immediately the host takes the drum, and he puts it down on the righthand side of his six guests. One of them begins to sing the songs of their ancestors. As soon as they begin to sing, the woman takes the kettle and puts it down near the place where she is sitting, and her husband takes a bucket and goes to draw water. . . . As soon as (the food) is all out of the water (of the kettle), the woman counts six pieces of soaked middle-parts of salmon, and puts them into one dish;

qa^{s}s lē k·ā′ts!ōtsa ^{s}nā′ł^{s}nEmēxLa lāx L!ēL!ā′sanēqwasa łēłō′q!wa. Wä, lē′da ts!Edā′qē ax^{s}ē′dxa ^{s}wā′pē qa^{s}s lē ts!ä′x·-^{s}īts lā′xa ha^{s}mā′pLē. Wä, lē′da bEgwā′nEmē ts!Ewē′L!Exōda. Wä, g·î′l-^{s}mēsē gwāł ts!Ewē′L!ExōdExs la′ē nā′x^{s}īd lā′xa ^{s}wā′pē; . . . g·î′l^{s}mēsē Elā′q ^{s}wī′-^{s}laxs la′ē gwāł ha^{s}mā′pa, laE′mḷax·-dēda ts!Edā′qē tsäx ā′łtä ^{s}wā′pa. Wä, g·î′lg·ilda^{s}mas gwāł ha^{s}mā′pa bē′bE-gwānEmaxs la′asa ts!Edā′qē tsä′x·^{s}ītsa ā′łta ^{s}wāp lāq. Wä, la^{s}mē′da ts!Edā′qē k·āstō′lilElasa łēłō′q!wē ḷE^{s}wa dzēdzE-ba′ts!ē lā′xēs k!waē′lasē.

Wä, hë′^{s}maaxs la′ē LE′lānEmēda bEgwā′nEmaxēs q!aL!ō′kwē ^{s}nē^{s}nEmō′-kwa. Wä, g·î′l^{s}mēsē g·āx nä′^{s}nakuxs la′ē nē′łaxēs gEnE′masēs LE′^{s}lālaēna^{s}yaxa q!aL!ō′kwē lā′xēs ^{s}nē^{s}nEmō′k^u. Wä, hë′x·^{s}ida^{s}mēsē la ax^{s}ē′dē gEnE′masēxa łē′^{s}wa^{s}ē qa^{s}s lē LEp!ā′lilas lāx ō′gwiwa-lilasēs lEgwī′łē. Wä, g·î′l^{s}mēsē gwā′łExs la′ē ē′ts!ē^{s}stēda bEgwā′nEmaxēs ^{s}nē^{s}nE-mō′kwē. Wä, k·!ē′st!a gä′łaxs g·ā′xaē hōgwī′LElē ^{s}nē^{s}nEmō′kwas. Wä, la-^{s}mē′sēda ts!Edā′qē q!ā′x·sīdzēq qa lēs k!usā′lił lā′xa la LEbEgwē′lx^{u}sa łē′^{s}wa^{s}ē. Wä, hë′x·^{s}ida^{s}mēsē lā′x·^{s}da^{s}x^u k!udzE-dzō′lił aq. Wä, laE′m hē′łalēda q!aL!ō′-kwē bē′bEgwā′nEm lāx dE′nxEla. Wä, hë′x·^{s}ida^{s}mēsa k!wē′lasLē ax^{s}ē′dxa mE-na′ts!ē qa^{s}s lē axā′lilas lāx hë′łk·!ōtE-malilasa q!aL!ō′kwē k!wē′ł. Wä, hë′x·-^{s}ida^{s}mēsē dâ′qâlēda ^{s}nEmō′kwasa g·î′l-ts!E^{s}yāla q!E′mdEma. Wä, g·î′l^{s}mēsē dE′nx^{s}īts la′ē ax^{s}ē′dēda ts!Edā′qaxa ha′nx·Lanowē qa^{s}s ha′ng·alilēq lā′xēs k!waē′lasē. Wä, la łā′^{s}wunEmas ax-^{s}ē′dxa nā′ḡats!ē qa^{s}s lē tsä lā′xa ^{s}wā′pē. . . . Wä, g·î′l^{s}mēsē ^{s}wī′^{s}lōstaxs la′ēda

and she puts also six pieces into the other dish. The guests finish singing; for they do not sing only four songs; sometimes there are twelve songs that the guests sing, for the songs of the first people are very short. That is when they learn the songs of the first people, for they do not want to forget them; and that is when the young men hear them, — when the old men are singing at a feast. Then the man takes the drum and puts it down near the door of the house, and the woman gives the food-mat to her husband to go and spread it in front of his friends. Then he takes up the dish and puts it down in front of three men, and again he picks up the other dish and puts it down in front of the other three. Then the man draws some water. Then the men rinse their mouths; and after they have finished rinsing their mouths, they all drink water; and after they have finished drinking, they eat; and after they have eaten, the man takes the bucket and draws some fresh water; and then the guests drink afterwards when they have finished eating. As soon as he comes after having drawn water, his friends stop eating; then he at once takes up the two dishes and puts them down at the place where his wife is sitting, and he takes the freshly drawn water and puts it down in front of his friends. Then he gives a cup to them, and they drink. The woman washes out one of the dishes from which they have been eating, and she pours water into it; and the man

ts!Edā'qē hō's^{s}īdxa q!aL!Exsa t!ēlk^{u} q!ā'q!aq!ē^{s} qa axts!ō'ts lā'xa ^{s}nEmē'xLa łō'q!wa. Wä, lā'xaa axts!ō'tsa q!aL!Exsa'^{s}maxat! lā'xa ^{s}nEmē'xLa łō'q!wa, la'ē gwāł dE'nxElēda k!wē'łē, qaxs k·!ē'saē â'Em mō'sgEm q!E'mdEmē dE'nx^{s}īda^{s}yâs. ^{s}nā'ł^{s}nEmp!Enaē ma^{s}łtsEmag·îyowē q!E'mdEmē dE'nx^{s}īdayōsa k!wē'łē, qaxs xE'nLElaē ts!Ełts!Ekwē' q!E'mdEmasa g·ā'lē bEgwā'nEma. Wä, hë'^{s}mēsēxs q!ā'q!aL!aaxa g·î'lts!Esē q!E'mq!EmdEma gwā'q!Ełaē łEnē'^{s}staq. Wä, hë'^{s}mis qa wuLE'lēsa ā'łōstâxa q!u'lsq!ulyakwaxs k!wē'lalaē. Wä, lē'da bEgwā'nEmē ax^{s}ē'dxa mEna'ts!ē qa^{s}s lē axstō'līłaq lā'xa ostâ'līłasa g·ō'kwē. Wä, lē'da ts!Edā'qē ts!â'sa ha^{s}mā'dzowē łē'^{s}wē^{s} lā'xēs łā'^{s}wunEmē qa lē^{s}s LEpts!ā'mōlīłas lā'xēs ^{s}nē^{s}nEmō'kwē. Wä, la k·ā'g·îlīłxa łō'q!wa qa^{s}s lē k·ā'x·ts!Emō'līłas lā'xa yū'dukwē. Wä, laEm^{s}xaā'wisē k·ā'g·ilīłxa ^{s}nEmē'xLa łō'q!wa qa^{s}s lē k·ā'x·ts!Emō'līłas lā'xa yū'dukwē. Wä, laEm^{s}xaā'wisē bEgwā'nEmē tsä'x·^{s}ītsa ^{s}wā'pē lāq. Wä, la^{s}mē'sa bē'bEgwā'nEmē ts!Ewē'L!Exōda. Wä, g·î'l^{s}mēsē gwāł ts!Ewē'L!ExōdExs la'ē ^{s}nā'ẋwa nā'x^{s}īd lā'xa ^{s}wā'pē. Wä, g·î'l^{s}mēsē gwāł nā'qaxs la'ē hamx·^{s}ī'da. Wä, g·î'l^{s}mēsē hamx·^{s}ī'dExs la'ēda bEgwā'nEmē ax^{s}ē'dxa nā'gats!ē qa^{s}s lē tsä'x·^{s}īdEx ā'łtä ^{s}wā'pa qa nagē'g·ē!tsēs Lē'lānEmē qō gwałEL ha^{s}mā'pLō. Wä, g·î'l^{s}mēsē g·ā'xa lā'x·dē tsäxs la'as gwāł ha^{s}mā'pē ^{s}nē^{s}nEmō'kwas. Wä, lē hë'x·^{s}īdEm la k·ā'g·alīłxa ma^{s}łExLa' łēłō'q!wa qa^{s}s lē k·ā'g·alīłas lāx k!waē'lasasēs gEnE'mē. Wä, la ax^{s}ē'dxēs ā'ł^{s}mē tsä'nEm ^{s}wā'pa qa^{s}s lē ha'ngEmlīłas lā'xēs ^{s}nē^{s}nEmō'kwē. Wä, la ts!â'sa k!wa^{s}sta' lāq. Wä, lā'x·da^{s}x^{u}^{s}mē nā'x^{s}īda. Wä, lē'da ts!Edā'qē ts!ō'xug·îndxa

puts it down in front of his friends, and they wash their hands.

Now we will talk about the split-down[1] when it is dried; and then I will talk about the way in which it is given to eat to eight men who are invited. Early in the morning, when the man arises, he desires to invite his clan, and he goes out to invite eight men of his clan. As soon as he has invited them to come into his house, he says to his wife, "Don't stay there in this manner, but clear out the rear of the house, for I have invited my clan!" Thus he says, and goes to get an eagle-wing broom and sweeps out the rear of the fireplace. Then his wife takes a mat and spreads it out there. Then her husband goes to get fire-wood, and splits it and makes a fire. As soon as he has done so, he goes to call his clan again; and it is not long before he comes back, and it is not long before the men of his clan come in. As soon as they all come and sit down, the man takes a drum and puts it down at the right-hand side of his guests; and when he goes to the door, he does not say aloud "Go ahead!" to those whom he has invited, [that they go ahead and sing]. At once the one song-leader begins to sing; and as soon as they begin to sing, the woman goes back to where the basket with the split-down is, and she counts sixteen pieces of split-down. She carries

ˢnEmē′xLa lā′xa ha′ˢmaatsɬēx·dē łō′qɬwa, qaˢs guxtsɬō′dēsa ˢwā′pē lāq. Wä, laE′mxaā′wisē bēbEgwā′nEme k·ā′x·tsɬamōts lā′xēs ˢnēˢnEmō′kwē. Wä, lā′x·daˢxwē tsɬE′ntsɬEnχˢwīda.

Wä, laE′mLEns gwāł gwā′gwēx·sāla lā′qēxs la′ē lE′mχwaseˢwa LE′qwaxa. Wä, laˢmē′sEn gwā′gwēx·sālał lā′qēxs la′ē haˢmg·ī′layō lā′xa maˢłgunā′lōkwē bē′bEgwānEms LE′lānEmē. Wä, hë′ˢmaaxs la′ē gaā′la la′ē ɬā′χˢwīdēda LE′lalaēxsdäxēs ˢnEˢmē′mōtē. Wä, la qā′sˢīd qaˢs lē LE′ˢlālaxēs maˢłgunā′lōkwē ˢnEˢmēmōta. Wä, g·ī′lˢmēsē ˢwē′lxtōd la LE′ˢlālaqēxs g·ā′xaē laē′L lā′xēs g·ō′kwē. Wä, la ˢnē′x·xēs gEnE′mē: "Gwā′ɬlas hë gwaē′ł qaˢs ē′χˢwīdaōsaxEns ō′gwīwalīłēx qaxg·în LE′ˢlalēg·axEn ˢnEˢmē′mōtāqɬEn," ˢnē′k·Exs la′ē axˢē′dxa k·ā′mäsa kwē′kwē qaˢs xē′χˢwīdēxa ō′gwiwalīłasēs lEgwī′łē. Wä, lē gEnE′mas axˢē′dxa łē′ˢwaˢē qaˢs lē LEpɬā′lił as lāq. Wä, lā′Lē łā′ˢwunEmas axˢē′dxa lEqwa′ qaˢs LE′mlEx·sEndēq qaˢs lEqwē′lax·ˢīdē. Wä, g·ī′lˢmēsē gwā′łExs la′ē ē′tsēˢstaxēs ˢnEˢmē′mōtē. Wä, k·lē′stla gä′łaxs g·ā′xaē aē′daaqa. Wä, la k·ɬē′sˢEmxatɬ gä′łaxs g·ā′xaē hō′gwīLElēs ˢnEˢmē′mōtē. Wä, g·ī′lˢmēsē ˢwī′ˢla klusˢā′līłExs la′ēda bEgwā′nEmē axˢē′dxa mEna′tsɬē qaˢs lē axˢā′līłas lāx hë′łk·ɬōdEnōLEmā′līłasēs LE′ˢlānEmē. Wä, g·ī′lˢmēsē la′stōlīłaxs la′ē k·lēs hā′sEla wä′xaxēs LE′lānEmē qa wä′g·īs dE′nxˢēda. Wä, hë′x·ˢidaˢmēsēda ˢnEmō′kwē nâ′qlagēs dōqâ′la. Wä, g·ī′lˢmēsē dE′nxˢēdExs la′asa tsɬEdā′qē ā′LEˢsta lāx haˢnē′lasasēs LE′qwaxaa′tsɬē Lɬā′bata, qaˢs hō′wEłtsɬōdēxa qɬā′LɬExsag·iyowē

[1] A kind of preserved salmon.

them in her arms and puts them down at the place where she is sitting. Then she takes two dishes and two oil-dishes, and she puts them down at the place where she is sitting. Then she also takes her oil and puts it down at her place. Then she sits down and puts eight pieces of split-down into each dish, and her husband breaks them to pieces, and the woman breaks other eight pieces into the other dish. After they have done so, the woman takes the oil-dishes and pours oil into them. After she has done so, her husband orders his guests to stop singing. He takes the drum and puts it down by the door of his house. Then the woman takes the food-mat and spreads it out in front of the guests. Then she takes one dish and puts it down in front of four men; then she takes up the other dish and puts it down in front of the other four; and she also takes the two oil-dishes, one in each hand, and puts them down on the outer side in the dishes, and then he goes and draws water for them. The one of highest rank first takes the cup with water in it and rinses his mouth; and after he has done so, he drinks of it, and then he gives it to his friends, and they all do the same way. After they have finished, the one highest in rank takes the split-down and folds it up and dips it into the oil and puts it into his mouth; and the guests all do the same way when they are eating; and as soon as they begin to eat, the man takes up a bucket and goes to draw fresh water; and as soon as he enters his house, he puts down the water that he has drawn; and when the guests

LĒ′qwaxa. Wä, la^{s}mēs gE′mxElaq qa^{s}s lē ax^{s}ā′lîłas lā′xēs k!waē′lasē. Wä, laE′m^{s}xaā′wisē ax^{s}ē′dxa ma^{s}łExLa′ łēłō′q!wa Ļe^{s}wa′ ma^{s}łExLa′ dzēdzEba′ts!a, qa^{s}s g·ā′xē k·ā′g·alîłas lā′xēs k!waē′lasē. Wä, laEm^{s}xaā′wisē ax^{s}ē′dxēs L!ē′^{s}na qa^{s}s g·ā′xē g·î′g·alîłas lā′xēs k!waē′lasē. Wä, lā′wisḷa k!wā′g·alîł qa^{s}s axts!ō′dēsa ma^{s}łgunā′łExsa LĒ′qwaxa lā′xa ^{s}nEmē′xLa łō′q!wa. Wä, la łā′^{s}wunEmas p!ō′p!oxsālax·^{s}īdEq. Wä, lē′da ts!Edā′qē p!ō′p!ōxsEndxa ma^{s}łgunā′łExsa qa^{s}s ō′gwaqē axts!ō′ts lā′xa ^{s}nEmē′xLa łō′q!wa. Wä, g·î′l^{s}mēsē gwā′łExs la′ēda ts!Edā′qē ax^{s}ē′dxa dzēdzEba′ts!ē qa^{s}s k!u′nxts!ōdēsa L!ē′^{s}na lāq. Wä, g·î′l^{s}mēsē gwā′łalîłEx la′as łā′^{s}wunEmas bEla′xa k!wē′łē qa gwā′łlag·īs dE′nxEla. Wä, la^{s}mē′sē ax^{s}ē′dxa mEna′ts!ē qa^{s}s lē ha′ng·alîłas lā′xa t!êx·î′läsēs g·ō′kwē. Wä, la^{s}mē′sa ts!Edā′qē ax^{s}ē′dxa ha^{s}mā′dzowē łē′^{s}wa^{s}ya qa^{s}s lē LEpts!amō′lîłas lā′xa k!wē′łē. Wä, la ax^{s}ē′dxa ^{s}nEmē′xLa łō′q!wa qa^{s}s lē k·ax·ts!amō′lîłas lā′xa mō′kwē. Wä, la ē′t!ēd k·ā′g·alîłxa ^{s}nEmē′xLa łō′q!wa qa^{s}s lē′xat! k·āx·ts!amō′lîłas lā′xa mō′ẋ^{us}maxat!. Wä, la ē′t!ēd wā′x·sEnẋ^{s}wīdxa ma^{s}łExLa′ dzēdzEba′ts!ä qa^{s}s lē k·ā′x·^{s}îts lāx L!ā′sanēqwasa łēłō′q!wa. Wä, lā′wisḷa la tsä′x·^{s}îtsa ^{s}wā′pē lāq. Wä, hë′^{s}misē nâ′xsâlaga^{s}ya g·îl dā′x·^{s}îdxa k!wa^{s}sta′ ^{s}wā′bEts!â′la qa^{s}s ts!Ewē′L!Exōdē lāq. Wä, g·î′l^{s}mēsē gwā′łExs la′ē nā′x^{s}îd lāq. Wä, lawī′sḷa ts!âs lā′xēs ^{s}nē^{s}nEmō′kwē. Wä, la ^{s}nā′ẋwaEm hë gwēx·^{s}îdē. Wä, g·î′l^{s}mēsē gwā′łExs la′ēda nâ′xsâlaga^{s}yas dā′x·^{s}îd lā′xa LĒ′qwaxa qa^{s}s k·!ō′x^{us}Emdēq. Wä, la dzEpî′ts lā′xa L!ē′^{s}na qa^{s}s ts!ō′q!usēs. Wä, la ^{s}nā′ẋwaEm hë gwē′g·ilēda k!wē′łaxs ha^{s}mā′paē. Wä, g·î′l^{s}mēsē hamx·^{s}î′dExs

finish eating, he takes the dishes and puts them down on the door-side of the fire. Then he draws water and gives it to them.

When a man wishes to invite ten men of his clan, he asks his wife to put some backbones into the soaking-box in the evening. Then the woman opens the backbone-receptacle and counts twenty pieces of backbones out of it. She puts them as well as possible into the soaking-box, which stands in the corner of the house. As soon as they are in, she pours water over them, and she only stops pouring water over them when it begins to overflow. Now she is ready for the man when he invites in the morning. Therefore, as soon as daylight comes, the man arises and wedges fire wood to pieces and builds the fire; and as soon as he finishes, he goes out and calls the members of his clan. When the man goes out of the house, his wife gets ready and cleans the rear of the fireplace. Sometimes the woman spreads the mat for the guests to sit on when they come in. Sometimes the man clears the house, when his wife is bad; but the man goes to draw water, and also the kettle is washed out by the man. As soon as this is finished, the man goes to call his ten friends again, and it is not long before they come in. Then the woman leads them to their seats; and as soon as they sit

la'ēda bEgwā'nEmē ax^{s}ē'dxa nā'gats!ē qa^{s}s lē tsäx ā'łtä ^{s}wā'pa. Wä, g·î'l-^{s}mēsē g·āx laē'L lā'xēs g·ō'kwaxs la'ē ha'ng·alīłtsēs tsä'nEmē. Wä, g·î'l^{s}mēsē gwāł ha^{s}mā'pē k!wē'^{s}lēkwasēxs la'ē ax^{s}ē'dxa łēłō'q!wē qa^{s}s lē k·ā'g·alīłas lā'xa ōstâ'līłasēs lEgwī'łē. Wä, lā'wisḷa la tsä'x·^{s}īdxa ^{s}wā'pē qa^{s}s lē tsä'x·^{s}īts lāq.

Wä, hë'^{s}maaxs la'ē ^{s}nē'k·ēda bEgwā'-nEmē qa^{s}s LE'^{s}lalēxēs ^{s}nEqō'kwē ^{s}nE-^{s}mē'mōta; wä, la^{s}mē's axk·!ā'laxēs gEnE'mē qa axstE'ndēsēs xā'k·!adzâ lā'xēs t!ē'lats!äxa dzā'qwa. Wä, la-^{s}mē'sa ts!Edā'qē x·ō'ẋ^{s}wīdxēs xā'k!adza-ts!ē. Wä, la^{s}mē's hō'swułts!ōdxa ma^{s}ł-tsE'mg·ustowē xā'k·!adzâ. Wä, la^{s}mē's aē'k·!amōts!âlas lā'xa t!ē'lats!äxs ha^{s}nē'-łaē lā'xa ōnē'gwīłasēs g·ō'kwē. Wä, g·î'l^{s}mēsē gwāł ha'nts!âlas lā'qēxs la'ē k·îp!Eqa'sa ^{s}wā'pē lāq. Wä, ā'ł^{s}mēsē gwāł qEpa'sa ^{s}wā'paxs la'ē tsētsEẋu'la. Wä, laE'm gwā'līł qaē'da bEgwā'nE-maxs LE'^{s}lalīłxa gaā'laLē. Wä, g·î'l-g·īł^{s}mas ^{s}nā'x·^{s}īdxa gaā'läxs la'ē Lā'ẋ-^{s}wīd qa^{s}s LE'mlEmx·sEndēxa lEqwa'. Wä, la^{s}mē's lEqwē'lax·^{s}īda, wä, g·î'l-^{s}mēsē gwā'ła la'ē qā's^{s}īd qa^{s}s lē LE'-^{s}lālaxē ^{s}nE^{s}mē'mōtē. Wä, g·î'l^{s}mēsē la lā'wElsēda bEgwā'nEmaxs la'ē gEnE'mas xwā'nał^{s}īda. Wä, laE'm ē'ẋ^{s}wīdxa ō'gwiwalīłasēs lEgwē'lasē. Wä, la^{s}mē'sē ^{s}nā'ł^{s}nEmp!EnaEm hë'^{s}mēda ts!Edā'qē LEp!ā'līłxa łē'^{s}wa^{s}ē qa k!wā'dzE^{s}wēsōłtsa k!wē'Laō g·āxL hōgwī'Lō. Wä, la^{s}mē's ^{s}nā'ł^{s}nEmp!Ena hë'^{s}ma bEgwā'nEmē ē'ẋ-^{s}wīdxa g·ō'kwaxs yā'x·sE^{s}maēs gEnE'mē. Wä, laE'mḷēda bEgwā'nEmē tsä'x·^{s}īdxa ^{s}wā'pē. Wä, hë'^{s}mēsa ha'nx·Lanowē laā'xat! ts!ō'xug·întsE^{s}wa, yî'sa bEgwā'-nEmē. Wä, g·î'l^{s}mēsē gwā'łExs la'ēda

down, the man at once takes the drum and puts it down on the right-hand side of his guests. Then the song-leader at once begins to sing; and as soon as they begin to sing, the woman and her husband take the kettle and take it to the place where she is sitting.... The woman at once divides the backbones which were broken into three pieces, into equal lots, so that there are twelve pieces of broken backbone in each dish. When it is all done, the woman pours oil into the five oil-dishes, and her husband takes a long food-mat and spreads it in front of his friends. Then he takes the drum and puts it down by the door of the house. Only four songs are sung by the guests, for there are ten guests; and when the man comes back, he takes two dishes and puts each down in front of two men. Now there are only two men (to each dish) when there are ten men and five dishes. When he finishes, he takes up two oil-dishes and puts them on the farther side in the dishes; and then he also takes up the others and puts them on the farther side of the other dishes. As soon as he has done so, he takes the bucket with water in it and places it in front of the guests. Then the one of highest rank takes the cup first and dips into it, and rinses his mouth; and after he

bEgwā'nEmē ē'tsē^{s}staxēs ^{s}nEqō'kwē ^{s}nē^{s}nEmō'kwa. Wä, k·!ē'st!a gä'łaxs g·ā'xaē hō'gwīLE'la. Wä, la^{s}mē'sa ts!Edā'qē q!ā'x·sīdzēq. Wä, g·î'l^{s}mēsē ^{s}wī'^{s}la k!us^{s}ā'līłExs la'ē hë'x·^{s}īda^{s}ma bEgwā'nEm la ax^{s}ē'dxa mEna'ts!ē qa^{s}s lē ax^{s}ā'līłas lā'xa hë'łk·!ōdEnūLEma, yî'sa k!wē'łē. Wä, la^{s}mē'sē nō'gadäs hë'x·^{s}idaEm dâ'qâla. Wä, g·î'l^{s}mēsē dE'nx^{s}ēdExs la'ēda ts!Edā'qē ax^{s}ē'dxa ha'nx·Lanowē ḷE^{s}wī's łā'^{s}wunEmē qa^{s}s g·ā'xēs lā'xēs k!waē'lasē.... Wä, laE'm hë'x·^{s}ida^{s}ma ts!Edā'qē ha'wasi^{s}lälaxa la yā'łyū'duẋ^{u}saak^{u} k·ō'gEk^{u} xā'k·!adzō. Wä, laE'm maē'małEg·Eyōts!E^{s}wa ^{s}nā'ł-^{s}nEmēxLa łō'q!waxa k·ō'gEkwē·xā'k·!adzō. Wä, g·î'l^{s}mēsē ^{s}wī'^{s}la gwā'łExs la'ēda ts!Edā'qē k!u'nxts!ōdālasa L!ē'^{s}na lā'xa sEk·!ē'xLa dzēdzEba'ts!a. Wä, lā'ḷē łā'^{s}wunEmas ax^{s}ē'dxa g·î'ldEdzō ha^{s}ma'dzō łē'^{s}wa^{s}ya qa^{s}s lē LEp!ā'līłas lāx L!ā'sEx·īdalīłtsēs ^{s}nē^{s}nEmō'kwē. Wä, laE'mḷax·dē ax^{s}ē'dxa mEna'ts!ē qa^{s}s lē axā'līłas lā'xa t!êx·î'läsa g·ō'kwē. Wä, hë'^{s}misēxs la'ē â'Em mō'sgEm, q!E'mdEmē k!wē'^{s}lalayōsa k!wē'łē, qaxs la'ē ^{s}nEqâ'kwa k!wē'łē. Wä, g·î'l^{s}mēsē g·āx aē'daaqēda bEgwā'nEmaxs la'ē k·ā'g·îlīłxa ma^{s}łExLa' łō'Elq!wa qa^{s}s lē k·ā'x·-ts!amōlīłas lā'xa maē'ma^{s}lō'kwē bē'bEgwānEma. Wä, laE'm maē'małElēda ^{s}nEqâ'kwē bē'bEgwānEmaxa sEk·!ä'xLa łō'Elq!wa. Wä, g·î'l^{s}mēsē gwā'łk·axs la'ē k·ā'g·îlīłxa ma^{s}łExLa' dzēdzEba'ts!ē qa^{s}s lē k·anē'qwas lāx L!āsanēqwasa łō'Elq!wē. Wä, laE'mxaā'wisē ax^{s}ē'dxa waō'kwē qa^{s}s lā'xat! k·ā'nēqwas lā'xa waō'kwē łō'Elq!wa. Wä, g·î'l^{s}mēsē gwā'łExs la'ē ax^{s}ē'dxa nā'gats!ē ^{s}wā'bets!âla qa^{s}s lē ha'nx·ts!amōlīłas la'xa k!wē'łē. Wä, lē'da nā'xsâlaga^{s}yas g·îl dā'x·^{s}īdxa k!wa^{s}sta' qa^{s}s tsäx·^{s}ī'dēs.

has finished, he drinks; and then all the others do the same who are going to eat with him. After they have finished drinking water, they all begin to eat. At once the man goes to draw fresh water for them to drink after they finish eating. When he comes back from drawing water, he waits for his friends to finish eating; and when they finish eating, the man takes up the dishes and puts them down at the place where his wife is sitting; and so he puts the bucket with water in it in front of the guests. Then they drink water. After they have finished drinking, the woman washes two dishes. As soon as they are clean, she pours water into them, and the man places them before those whom he has given to eat. Then they wash their hands.

Now I will talk about roasted backbone (of salmon) that is to be fed to twelve men. When the man goes to invite his twelve friends in the morning, then as soon as he comes back, he asks his wife to get ready and help him clear the rear of the fireplace. After he has cleared it, he spreads out three mats. Then the woman goes and takes four dishes and four oil-dishes, and kelp with oil in it, and puts them down at the place where she sits at the doorside of the fireplace of the house. Then the man goes again for those whom he is going to invite. It

Wä, la^{s}mē′sē ts!ɛwē′l!ɛxōda. Wä, g·î′l^{s}mēsē gwā′łɛxs la′ē nā′x^{s}īda. Wä, la ^{s}nā′ẋwaɛm la ō′gwaqa hë gwē′x·^{s}īdē ha^{s}mō′tlas. Wä, g·î′l^{s}mēsē gwāl nā′qaxa ^{s}wā′paxs la′ē ^{s}wī′^{s}la hamx·^{s}ī′da. Wä, hë′x·^{s}ida^{s}mēsēda bɛgwā′nɛmē la tsäx ā′łtä ^{s}wā′pa qa nā′gēg·īlēs qō gwāłɛ ha^{s}mā′plō. Wä, g·î′l^{s}mēsē g·ā′xa tsä′x·däxs la′ē ē′sɛla qa gwā′lēs ha^{s}mā′pēs ^{s}nē^{s}nɛmō′kwē. Wä, g·î′l-^{s}mēsē gwāł ha^{s}mā′pɛxs la′ēda bɛgwā′-nɛmē k·ā′g·îlīłxa łō′ɛlq!wē qa^{s}s lē k·ā′-g·alīłas lāx k!waē′lasasēs gɛnɛ′mē. Wä, lā′wisẓa la ha′ng·alīłtsa ^{s}wā′bɛts!âla nā′gats!ē lāx l!ā′sa^{s}yasa k!wē′łē. Wä, la′x·da^{s}xwē nā′x^{s}īd lā′xa ^{s}wā′pē. Wä, g·î′l^{s}mēsē gwāł nā′qaxs la′ēda ts!ɛdā′qē ts!ō′xug·îndxa ma^{s}łɛxla′ łō′ɛlq!wa. Wä, g·î′l^{s}mēsē ë′g·îg·axs la′ē qɛpts!ō′tsa ^{s}wā′pē lāq. Wä, lē′da bɛgwā′nɛmē k·ā′x·ts!amōlīłas lā′xēs hamg·ī′lasɛ^{s}wē. Wä, lā′x·da^{s}x^{u}^{s}mēsē ts!ɛ′nts!ɛnẋ^{s}wīda.

Wä, la^{s}mē′sɛn gwā′gwēx·s^{s}ālał lā′-qēxs la′ē hamg·ī′layâ l!ō′bɛdzō xā′k·!a-dzō lā′xa malō′gwīg·ɛyowē bē′bɛgwā-nɛma. Wä, hë′^{s}maaxs la′ē lɛ′^{s}lalēda bɛgwā′nɛmaxēs malō′gwig·ɛyowē ^{s}nē-^{s}nɛmō′kwaxa gaā′la. Wä, g·î′l^{s}mēsē g·āx aē′daaqēda bɛgwā′nɛmaxs la′ē hë′x·^{s}idaɛm axk·!ā′laxēs gɛnɛ′mē qa gwā′nał^{s}īdēs qa g·iwā′lēsēqēxs la′ē ē′kwaxa ō′gwīwalīłasēs lɛgwī′^{s}lasa. Wä, g·î′l^{s}mēsē gwāł ē′kwaxs la′ē lɛp!ā′līłtsa yū′duẋwē łē′ɛl^{s}wa^{s}ya. Wä, la^{s}mē′sa ts!ɛdā′qē ax^{s}ē′dxa mō′wēxla łō′ɛlq!wa ɬɛ^{s}wa′ mō′wēxla dzēdzɛba′ts!ä ɬɛ^{s}wī′s wā′wadē l!ē′^{s}nats!âla qa^{s}s g·ā′xē ax^{s}ā′-līłas lā′xēs k!waē′lasēda ōstâ′līłasa lɛ-gwī′^{s}lasasa lɛgwī′łasa g·ō′kwē. Wä, la^{s}mē′sa bɛgwā′nɛmē ē′tsē^{s}staxēs lē′la-

is not long before he comes back. Then he wedges the fire-wood and builds up a fire. Then the fire-wood in the house is piled up. When all his twelve friends have come in, and after they have sat down, the man takes a drum and puts it down at the right-hand side of the guests, and the song-leader begins to sing; then all the twelve men begin to sing; and as soon as they begin to sing, the woman takes the fresh roasted salmon-back, and her husband takes the roasted salmon-back out of the tongs. He takes out twelve salmon-backs and puts them on the mats that are spread at his wife's seat. Then the woman puts down the four dishes, and her husband breaks the roasted salmon-backs into the dishes. Then he takes off the flesh of the backs and puts what is taken off of three salmon-backs into one dish. Then the woman puts oil into the four oil-dishes; and as soon as she has finished, she waits for the end of the four songs that are sung. They are traditional songs; and after they finish the four songs, the man takes the drum and puts it down by the door of the house. Then he takes along a food-mat and unfolds it in front of his guests. After he has done so, he takes up two dishes and puts one dish in front of each three men, and he only stops when he has put down the two others before the other guests.

nEmlē. Wä, k·!ē'st!a gä'ɬaxs g·ā'xaē aē'daaqa. Wä, la lE'mlEmx·sEndxa lEqwa' qa^{s}s lEqwē'lax·^{s}īdē. Wä, laE'm la L!ā'gawasLālē lEgwī'ɬas. Wä, g·ā'x-^{s}mēsē ^{s}nā'ẋwa hō'gwīLElē malō'gug·E- yowē ^{s}nē^{s}nEmō'ẋ^{u}s, wä, g·î'l^{s}mēsē ^{s}wī'^{s}la g·āx k!us^{s}ā'līɬExs la'ēda bEgwā'nEmē ax^{s}ē'dxa mEna'ts!ē qa^{s}s lē ax^{s}ā'līɬas lāx hë'ɬk·!ōdEnūLEma^{s}yasa k!wē'ɬē. Wä, hë'x·^{s}ida^{s}mēsē nâ'q!Eq!a^{s}yas dâ'qâla. La^{s}mē'sē ^{s}nā'ẋwa dE'nx^{s}ēdEx·da^{s}xwa ma^{s}lō'gug·iyowē bē'bEgwānEma. Wä, g·î'l^{s}mēsē dE'nx^{s}ēdExs la'asa ts!Edā'qē axā'xōdxa ā'ɬẋwasē L!ō'bEdzâ. Wä, la^{s}mē'sē ɬā'^{s}wunEmas x·îk·!Ex·^{s}īdxa L!ō'- bEdzowē lā'xēs L!ō'psayō. Wä, laE'm x·îk·!Ex·^{s}īdEx ma^{s}ɬEg·îyowē L!ō'bEdzâ qa^{s}s axdzō'dēs lā'xa ɬē'^{s}wa^{s}ē la LEbē'ɬa lāx k!waē'lasēs gEnE'mē. Wä, la^{s}mē'- sēda ts!Edā'q mEx^{s}ā'līɬxa mEwē'xLa ɬō'Elq!wa. Wä, lē ɬā'^{s}wunEmas LE'nx- ts!âlasa L!ō'bEdzowē lā'xa ɬō'Elq!wē. Wä, laE'm axâ'lax q!E'mElts!â^{s}yasa q!ō'- q!uyâ qa^{s}s axts!â'lēsa yū'duẋ^{u}sē L!ō'bE- dzō lā'xa ^{s}nā'ɬ^{s}nEmēxLa ɬō'Elq!wa. Wä, lā'ḷēda ts!Edā'qē k!uxts!â'lasa L!ē'^{s}na lā'xa mowē'xLa dzēdzEba'ts!ä. Wä, g·î'l^{s}mēsē gwā'ɬExs la'ē ē's^{s}alīɬ qa ^{s}wī'^{s}lēs dE'nx^{s}ēdayuwē mō'sgEmē q!E'm- q!EmdEmaxa nēnEwī'lala q!Emq!EmdE- ma. Wä, g·î'l^{s}mēsē ^{s}wī'^{s}la la dE'nx^{s}ētsa mō'sgEmē q!E'mq!EmdExs la'ē hë'x·^{s}ida- ^{s}mēda bEgwā'nEmē ax^{s}ē'dxa mEna'ts!ē qa^{s}s lē axā'līɬas lā'xa t!êx·î'läsēs g·ō'kwē. Wä, la ax^{s}ē'dxa g·î'ldEdzōwē ɬē'^{s}wē^{s} ha^{s}madzâ' qa^{s}s lē dā'ɬalīɬas lāx ōẋ^{u}ts!a- mâ'līɬasa k!wē'ɬē. G·î'l^{s}mēsē gwā'ɬExs la'ē k·ā'g·alīɬxa ma^{s}ɬExLa' ɬō'Elq!wa qa^{s}s lē k·ā'x·ts!amōlīɬtsa ^{s}nā'ɬ^{s}nEmē'xLa lā'xa yaēyū'dukwē bē'bEgwā'nEma. Ā'ɬ^{s}mēsē gwā'ɬExs la'ē ^{s}wī'^{s}laEm la k·ā'x·^{s}ītsa ma- ^{s}ɬExLa^{s}maxa't! lā'xa waō'kwē k!wē'ɬa.

When all the four dishes have been put down, the man takes a bucket with water in it and places it in front of the one who is of the highest rank among (his guests); to him the cup is given first; then he draws water and rinses his mouth; and after he has done so, he drinks; and after he has finished, those who are going to eat with him do the same. (I have forgotten about the four oil-dishes. The man takes them up and puts them down in the farther side of the dishes. Then he takes the bucket with water in it.) After they have finished drinking the water, they begin to eat. Then the man takes the two buckets and goes to get fresh water; and it is not long before the man comes into his house, carrying in each hand a bucket with water in it. He just puts them down and waits for his guest to finish eating. As soon as the guests finish eating, the man takes the dishes and puts them down at the place where his wife is sitting. As soon as he has brought all the dishes, he takes up one of the buckets and puts it down in front of the one highest in rank among his guests. Then he takes a cup and gives it to the one highest in rank among those whom he had invited, and he drinks first. After he has finished drinking, he gives the cup to those who have eaten with him, and they all drink water; and after they have finished drinking, the woman takes cedar-bark rubbed soft and gives it to the guests to wipe their hands; and after they have wiped their hands, they just wait for the second course.

Wä, g·î'l'mēsē la ˢwī'ᵋla k·aē'ła mewē'xLa łō'Elq!waxs la'ēda bEgwā'nEmē axˢē'dxa ˢwā'bEts!âla nā'gats!ä qaˢs lē ha'nx·ts!amōlīłas lāx nâ'xsâlagaˢya. Wä, hë'ᵋmis g·îl ts!â'sōsa k!waˢsta'. Wä, la tsä'x·ᵋīd lā'xa ˢwā'pē qaˢs ts!Ewē'-L!Exōdē. Wä, g·î'lˢmēsē gwā'łExs la'ē nā'xᵋīda. Wä, g·î'lˢmēsē gwā'łExs la'ē ō'gwaqē haˢmō'tLas. (Wä, hē'xōḷēda mEwē'xLa dzēdzEba'ts!a. Laˢmē' bEgwā'nEmē k·ā'g·ilīłaq qaˢs lē k·ā'ts!ōts lāx L!ā'sanēqwasa łō'Elq!wa. Wä, lawī'sḷa lā'sa ˢwā'bEts!â la nā'gats!ä lā'xēq.) Wä, g·î'lˢmēsē gwāł nā'qaxa ˢwā'paxs la'ē hamx·ᵋī'dEx·daˢxwa. Wä, laˢmē'sa bEgwā'nEmē axˢē'dxa maˢłtsE'mē nā'gats!ä qaˢs lē tsäx ā'łtä ˢwā'pa. Wä, k·!ē'st!a gä'łaxs g·ā'xaēda bEgwā'nEmē g·ā'xēLEla lā'xēs g·ō'kwē wā'x·sgEmxa nā'gats!ē ˢwā'bEts!âla. Wä, â'ᵋmēsē hanEmg·ā'liłaq, qaˢs ē'sElēxa k!wē'łē qa gwā'łēs haˢmā'pa. Wä, g·î'lˢmēsē gwāł haˢmā'pa k!wē'łaxs la'asa bEgwā'nEmē axˢē'dxa łō'Elq!wē qaˢs g·ā'xē k·ā'g·alīłas lāx k!waē'lasasēs gEnE'mē. Wä, g·î'lˢmēsē ˢwī'ᵋlg·alīłēda łō'Elq!wäxs la'ē k·!ō'quyōlīłxa ˢnE'msgEmē nā'gats!ä qaˢs lē hanx·ts!amō'līłas lā'xa nâxsâ'lagaˢyasa k!wē'łē. Wä, laˢmē'sē axˢē'dxa k!waˢsta' qa ts!Ewē's lā'xa nâxsâ'lagaˢyasēs Lē'lānemē. Wä, hë'ᵋmis g·îl nā'xᵋēda. Wä, g·î'lˢmēsē gwāł nā'qaxs la'ē ts!â'sa k!waˢsta' lā'xēs haˢmō'tdē. Wä, lax·daˢxᵘˢmēsē ˢwī'ᵋla nā'xᵋēdEx·daˢxᵘxa ˢwā'pē. Wä, g·î'lˢmēsē gwāł nā'qaxs la'ēda ts!Edā'qē axˢē'dxa q!ō'yaakwē tElqᵘ k·ā'dzEkwa qaˢs ts!Ewē's la'x·daˢxᵘxa k!wē'łē qa dē'dEnχˢwīdayōs. Wä, g·î'lˢmēsē gwāł dē'dEnkwaxs la'ē â'Em la awu'lgEmg·alīł qaˢs hē'lēg·întsEˢwē.

Now we will talk about roasted salmon-back when it is brittle. In winter it is really dry, and it is still (called) roasted back of dog-salmon. This is also done in the same way as we first talked about the fresh roasted salmon-back, when young men are invited to a feast. When old men are invited by the person, old dried roasted salmon-back is soaked in the soaking-box, which stands in the corner of the house. Then the man makes a request of his wife when he is going to invite sixteen old men, — in the evening, when he thinks that he will invite them on the coming morning. The woman at once takes the basket in which the old roasted salmon-backs are kept. It is in the corner of the house. Then she counts out of it sixteen pieces of old roasted salmon-backs; and she puts them into the soaking-box, which stands in the corner of the house. Then it soaks in it during the evening, that it may be soft the next morning. As soon as day comes, in the morning, the man arises and splits fire-wood for his fire; and when the fire that he makes blazes up, he awakens his wife (and asks her) to arise, then the man goes out of the house to call the old men. Immediately his wife takes the wing of an eagle to sweep out the rear of the fireplace. After she has finished sweeping, she takes four mats and spreads them; and after she has finished doing so, she goes and takes four dishes and four oil-dishes, and also kelp with oil in it, to put them down at her seat by the door-side of the fire. Her husband does not stay out long before he comes back, and he

Wä, ·la^{s}mē′sens gwā′gwēx·s^{s}ālał lā′xa l!ō′bedzō xā′k·adzâxs la′ē tsō′sa. Wä, laE′m â′lak·āla la lE′mxwaxa la ts!awu′nxa. Wä, hë′x·sä^{s}ma l!ō′bedzō xā′k·!adzâsa gwā′xnisē. Wä, hë′Em^{s}xaa gwēg·ī′lasEwē g·î′lx·dEn gwā′gwēx·s^{s}ālasaxa ā′łxwasē l!ō′bedzō xā′k·!adzâ, yîxs ha^{s}yā′łaē lē′^{s}lānEmasa k!wē′lasē. Wä, g·î′l^{s}mēsē la q!ulsq!u′l^{s}yakwa lē′^{s}lālasōLasa bEgwā′nEmaxs la′ē t!ē′ł^{s}īdxa gē′masē l!ō′bedzō xā′k·!adzâ lā′xa t!ē′lats!ē ha^{s}nē′l lāx ō′nēgwīłasēs g·ō′kwē. Wä, laE′m axk·!a′lēda bEgwā′nEmaxēs gEnE′maxs lē′^{s}lalēLaxa q!ā′l!ōgug·iyowē q!ulsq!u′l^{s}yakwaxa dzā′qwaxs la′ē ^{s}nē^{s}nk·!ē′qEla qa^{s}s lē′^{s}la^{s}łixa lā′La ^{s}nā′x·^{s}īdEłxa gaā′laLa. Wä, hë′x·^{s}ida^{s}mēsē gEnE′mas la ax^{s}ē′dxa l!ā′batē, yîx g·ī′ts!E^{s}wasasa gē′masē l!ō′bedzō xā′k·!adzâxs la′ē ha^{s}nī′ł lā′xa onē′gwīłasa g·ō′kwas. Wä, laE′m hō′s^{s}ułts!ōdxa q!EL!ets!ā′gEg·iyowē gē′mas l!ō′bedzō xā′k·!adzâ qa^{s}s lē gE′mxstEndEq lā′xēs t!ē′lats!äxs ha^{s}nē′łaē lā′x onē′gwīłas g·ō′kwas. Wä, laE′m t!ē′łaliłaqxa dzā′qwa qa^{s}s pē′x^{s}wīdēł lā′laał lā′xa gaā′laLa. Wä, g·î′l^{s}mēsē ^{s}nā′x·^{s}īdxa gaā′läxs la′ēda bEgwā′nEmē ḷā′ẋ^{s}wīd qa^{s}s k·!Ek·!Ewa′xs^{s}Endēxa lEqwa′ qa^{s}s lEgwī′łē. Wä, g·î′l^{s}mēsē xEqō′stâwē lEqwē′la^{s}yasēx la′ē gwē′x·^{s}īdxēs gEnE′mē qa ḷō′ẋ^{s}widēs. Wä, lā′wīsḷa la lā′wElsēda bEgwā′nEmē lā′xēs g·ōkwē qa^{s}s lē lē′^{s}lālaxa q!ulsq!u′l^{s}yakwē. Wä, hë′x·^{s}ida^{s}mēsē gEnE′mas ax^{s}ē′dxa xē′gwayowē k·ā′masa kwē′kwē qa^{s}s xē′kuliłēs lāx ō′gwīwaliłasēs lEgwī′łē. Wä, g·î′l^{s}mēsē gwāł xē′kwaxs la′ē ax^{s}ē′dxa mō′wē lē′El^{s}wa^{s}ya qa^{s}s lē lEp!ā′lîłas lāq. Wä, g·î′l^{s}mēsē gwā′łalîłExs la′ē k·!E′nx·^{s}īdxa mōwē′xLa lā′xēs łō′Elq!wa, ḷE^{s}wa′mōwē′xLa dzēdzEba′ts!ä. Wä, hë′^{s}mēs-

goes at once to draw water. When he comes back, he takes the kettle and puts it on the floor at his wife's seat. When everything is ready, the man goes again for those whom he has invited; and it is not long before he returns, and following him come the sixteen guests. Then his wife leads them to their places, and the men of lower rank sit on both sides of those of high rank [among them]. Immediately the man takes the drum and puts it down at the right-hand side of the guests. Then the song-leaders begin to sing the old songs.

The woman takes out of the water in which they are soaking the sixteen pieces of soaked roasted salmon-backs, and she puts them down on the mat spread by her seat. Her husband breaks them into three pieces and puts them into the kettle. After they are all broken, the man takes up the kettle and puts it on the fire; and when the kettle is on the fire, he takes a bucket with water in it and pours (the water) into the kettle. After the guests finish singing the four songs which are sung, the man at once takes the drum and puts it down near the door of the house, and that which is being cooked does not boil long before he takes it off.

ḷēs wā'wadētsl!âla Ll!ē'ᵋna qaᵋs g·ā'xē axᵋā'līłas lā'xēs k!waē'lasē, lāx ōstâ'līłasēs Legwī'łē. Wä, k·!ē'stla gē'wElsElē łā'ᵋwunEmasēxs g·ā'xaē aē'daaqa. Wä, hë'x·ᵋida ᵋmēsē la tsäx ᵋwā'pa. Wä, g·î'lᵋmēsē g·āx aē'daaqaxs la'ē axᵋē'dxa ha'nx·Lanowē qaᵋs g·ā'xē ha'ng·alīłas lāx k!waē'lasasēs gEnE'mē. Wä, g·î'lᵋmēsē ᵋwī'ᵋla la gwā'līłaxs la'ēda bEgwā'nEmē ē'tsēᵋstaxēs Lē'ᵋlālasEᵋwē. Wä, k·!ē'stla gä'łaxs g·ā'xaē aē'daaqa, wä, g·ā'xᵋmēsē E'lxḷaᵋēda q!aL!â'gug·iyowē Lē'lānEms. Wä, laᵋmē'sē gEnE'mas q!ā'x·sīdēq. Wä, laE'm k!usᵋā'līła, bē'bEgwānEmq!ālḷEm lāx wā'x·salīłasēs nâ'xsâlagaᵋē. Wä, hë'x·ᵋidaᵋmēsa bEgwā'nEmē la axᵋē'dxa mEna'ts!ē qaᵋs lē axᵋā'līłas lāx hë'łk·!ōdEnōLEmaᵋyasa k!wē'łē. Wä, la hë'x·ᵋidaᵋmē nâ'q!Egaᵋyas dâ'qâlasa g·î'lts!Eᵋyāla q!E'mdEma.

Laᵋmē'sa ts!Edā'qē axᵋustE'ndxēs tl!ē'łaseᵋwē q!aL!a'ts!agEg·iyuwē tl!ēlkᵘ L!ō'bEdzowē xā'k·!adzâ. Wä, g·ā'xᵋmēsē axdzō'ts lā'xa łē'ᵋwaᵋē LEbī'ł lāx k!waē'lasas. Wä, laᵋmē'sē łā'ᵋwunEmas yā'łyūduẋᵘsᵋala k·ō'qoxsᵋālaq qaᵋs axts!â'lēs lā'xa ha'nx·Lanowē. Wä, g·î'lᵋmēsē ᵋwī'ᵋla la k·ō'gEkuxs la'asēda bEgwā'nEmē k·ō'qwalīłxa ha'nx·Lanowē qaᵋs hanx·LE'ndēs lā'xa Legwī'łē. Wä, g·î'lᵋmēsē E'lx·ḷalēda ha'nx·Lanâxs la axᵋē'dxa ᵋwā'bEts!âla nā'gats!ä qaᵋs guq!Ek·ē's lāq. Wä, laᵋmē's gwāł dE'nxElēda k!wē'łaxs la'ē mō'sgEmēs dE'nxᵋēdā'yuwē q!E'mq!EmdEma. Wä, hë'x·ᵋidaᵋmēsa bEgwā'nEmē la axᵋē'dxa mEna'ts!ē qaᵋs lē axᵋā'līłaq lā'xa mā'x·stâᵋyas tl!ê'x·î'läsēs g·ō'kwē. Wä, la k·!ēs gē'g·ilīł maE'mdElqulēda ha'nLEntsEᵋwasēxs la'ē ha'nx·sᵋdEq. Wä, hë'x·ᵋidaᵋmēsa bEgwā'nEmē axᵋē'dxa mowē'xLa łō'Elq!wa qaᵋs mExᵋā'łīłēq. Wä, la

Immediately he takes the four dishes and puts them down on the floor. He takes the tongs and takes out of the water what has been cooked. He counts sixteen pieces of salmon-backs. In each dish, after they have been broken into three pieces, there is one roasted salmon-back. After the four dishes are filled, the woman takes the four oil-dishes and pours the oil into them; and after the oil has been poured in, the man takes the long food-mat and spreads it in front of his guests; and after he has spread it, he takes up the dishes and places them in front of his guests; and after he has taken up the four dishes, he takes the oil-dishes and puts them in the farther corner of the dishes. As soon as this is done, he draws water and gives it to the one highest in rank among the guests. Immediately the one highest in rank among the invited ones takes the cup with water in it and rinses his mouth with it; and after he has rinsed his mouth, he drinks of it; and after he finishes drinking, he gives it to the one next to him, and they pass along the cup to the other guests. After they finish drinking, the one who drank first, the one of noblest rank among them, begins to eat, and then the host takes up two buckets and goes to draw water; and when he comes back, he puts down the water that he has drawn, for his guests have not yet finished eating. After they have eaten, the man takes away the dishes and puts them down at his wife's seat, and the woman pours out the food that is left by the guests. Now the two dishes

ax^{s}ē′dxēs ts!ē′sLāla. Wä, laE′m łEx-^{s}usteE′ndxēs ha′nx·LEntsE^{s}wē. Wä, laE′m q!ēq!ā′L!agiyowē hō′sts!ōyâs L!ō′bEdzō xā′k·!adzō lā′xa ^{s}nā′ł^{s}nEmēxLa łō′q!wa lāx laē′na^{s}yas yā′ɬyuduχ^{u}saa′kwa ^{s}nā′ł-^{s}nEmē L!ō′bEdzō xā′k·!adzâ. Wä, g·ī′l-^{s}mēsē ^{s}wī′^{s}la la qō′qut!ēda mowē′xLa łō′Elq!waxs la′ēda ts!Edā′qē ax^{s}ē′dxa mowē′xLa dzēdzEba′ts!ä. Wä, la k!u′nx-ts!ōtsa L!ē′^{s}na lāq. Wä, g·ī′l^{s}mēsē ^{s}wī′^{s}la la k!u′nxts!Ewā′kwēxs la′ēda bE-gwā′nEmē ax^{s}ē′dxa g·ī′lDEdzowē ha^{s}ma′-dzō łē′^{s}wa^{s}ya qa^{s}s lē LEp!ā′līłas lāx L!ā′sa^{s}yasēs LE′^{s}lānEmē. Wä, g·ī′l^{s}mēsē gwāł LEpa′qēxs la′ē k·ā′g·ilīłxa łō′Elq!wē qa^{s}s lē k·a′x·ts!amōlīłas lā′xēs LE′lānEmē. Wä, g·ī′l^{s}mēsē gwāłk·asa mEwē′xLa łō′Elq!waxs la′ē ax^{s}ē′dEx dzē′dzEbats!ē qa^{s}s lē k·anē′qwas lāx L!ā′sanēqwasa łō′Elq!wē. Wä, g·ī′l^{s}mēsē ^{s}wī′^{s}la gwā′-łExs la′ē tsä′x·^{s}īd lā′xa ^{s}wā′pē qa^{s}s lē tsä′x·^{s}īts lāx nâ′xsâlaga^{s}yasa k!wē′łē. Wä, hë′x·^{s}ida^{s}mēsa nâ′xsâlaga^{s}yasa LE′-lānEmē dā′dalaxa ^{s}wā′bEts!âla k!wa^{s}sta′ qa^{s}s ts!Ewē′L!Exōdē lāq. Wä, g·ī′l^{s}mēsē gwāł ts!Ewē′L!ExōdExs la′ē nā′x^{s}īdē lāq. Wä, g·ī′l^{s}mēsē gwāł nā′qaxs la′ē ts!âs lā′xēs apsā′līłē. Wä, la^{s}mē′sē â′Em la hanā′qElayâ k!wa^{s}sta′ lāx wā′xaasāsa k!wē′łē. Wä, g·ī′l^{s}mēsē ^{s}wī′^{s}la gwāł nā′qaxs la′ē hë′^{s}ma g·ī′lx·dē nā′x^{s}ēda, yî′xa nâ′xsâlaga^{s}yas hamx·^{s}ī′da. Wä, la^{s}mē′sa k!wē′lasē k·!ō′qulīłxa ma^{s}ltsE′-mē nā′Engats!ä, qa^{s}s lē tsäx ^{s}wā′pa. Wä, g·ī′l^{s}mēsē g·āx aē′daaqaxs la′ē hanE′mg·alīłtsēs tsä′nEmē, yîxs k·!ē′s-^{s}maē gwāł ha^{s}mā′pēs k!wēlē′kwē. Wä, g·ī′l^{s}mēsē gwāł ha^{s}mā′pExs la′ēda bE-gwā′nEmē k·ā′g·ilīłxa łō′Elq!wē qa^{s}s g·ā′xē k·ā′g·alīłElas lāx k!waē′lasasēs gEnE′mē. Wä, hë′x·^{s}ida^{s}mēsēda ts!E-dā′qē qEp!ułts!ō′dxa hēmaxLa^{s}ya′sa

are emptied. Then she washes the inside and she pours water into them; and her husband takes them up and puts them down, — one before the one highest in rank among his guests, the other one before his other guests. As soon as the two dishes for washing the hands have been put down, they wash their hands; and when they finish washing their hands, the woman gives them a towel (made of soft cedar-bark); and after the guests have wiped their hands, the host takes up the water that he has drawn and places it before the one highest in rank among his guests, and he drinks. After he finishes drinking, he gives the cup to the next one, and he drinks; and they pass the cup along to the other guests. After this has been done, they wait for the next course.

k!wē'łē; la lō'pEmts!âx·ˢīdēsa maˢłExLa' łō'Elq!wa. Wä, laˢmē'sē ts!ō'xug·îndEq. Wä, la qEpts!ō'tsa ˢwā'pē lāq. Wä, lē łā'ˢwunEmas k·ā'g·ilīłaq qaˢs lē ha'ng·alīłēsa ˢnEmē'xLa lāx nExts!amâ'līłtsa nâ'xsâlagaˢyasēs k!wē'lēkwē. Wä, lä'sa ˢnEmē'xLa lā'xa waō'kwē k!wē'ła. Wä, g·î'lˢmēsē ˢwī'ˢlg·alīłēda maˢłExLa' ts!ō'ts!Engwats!ē łō'Elq!waxs la'ē ts!ō'ts!Enx̣-ˢwīdEx·daˢxwa. Wä, g·î'lˢmēsē gwāł ts!ō'ts!Enkwaxs la'ēda ts!Edā'qē ts!â'sa dē'gEmyowē lāq. Wä, g·î'lˢmēsē gwāł dē'dEnkwaxs la'ēda Lē'lanEmäq k·!ō'kulīłxēs tsä'nEmē ˢwā'pa qaˢs lē ha'ngEmlīłas lāx ˢnExts!amâ'līłasa nâ'xsâlaga-ˢyasēs Lē'lanEmē. Wä, lē nā'xˢīda. Wä, g·î'lˢmēsē gwāł nā'qaxs la'ē ts!â'sa k!waˢsta' lā'xa mak·ā'łaq. Wä, lā'xaē nā'xˢīda. Wä, â'ˢmēsē la hā'yanaqElēda k!waˢsta' lāx wā'xaasasa k!wē'łē. Wä, g·î'lˢmēsē gwā'łExs la'ē awu'lgEmg·alīł qaˢs hē'lēg·întsEˢwē.

VI. — TRAVEL AND TRANSPORTATION.

The most important means of transportation is the canoe. The method of making the canoe has been described before. At present two types of canoe are in common use, — the northern canoe (x̣wē′dɛ̄kᵘ), with slanting stern and sharp vertical bow under the water-line, and with a long prow corresponding in form to the stern; and the Chinook canoe which is originally characteristic of the Nootka, with vertical stern and long bow, which is often worked out in the form of a bird's head.[1] Two models of the Chinook canoe (ku′mtsała) are show in Fig. 115. Like all models, these are out of proportion, being too wide as compared to the length. The one shown in Fig. 115, *b*, has a modern rudder attached to the stern.

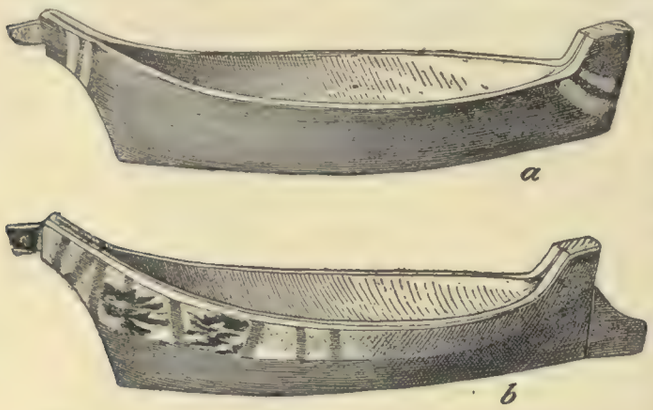


Fig. 115, *a*. ($\frac{16}{2474}$), *b*. ($\frac{16}{2471}$). Models of Chinook Canoes. Length, 28 cm.

The Kwakiutl, however, claim that in olden times their canoes were of a different style. Fig. 116 represents what is claimed to be the typical old

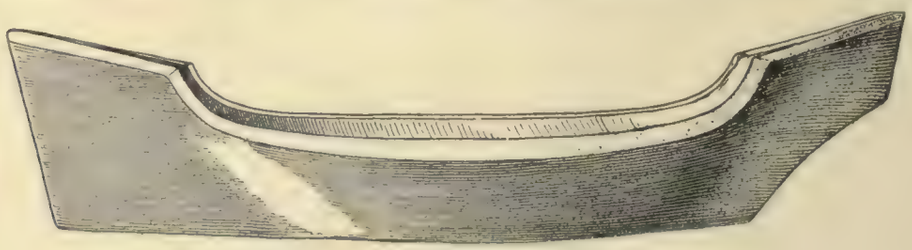


Fig. 116 ($\frac{16}{2504}$). Model of Old-Style Canoe. Length, 84 cm.

Kwakiutl canoe, called g·a′ᵉlâ. It is characterized by a very heavy bow and a large high stern. The exact proportions of this canoe are of course unknown. Fig. 117 represents a model of the ancient war-canoe (mɛ′nga). The type of this canoe is evidently somewhat similar to the Chinook canoe, although the stern is more slanting. The bow is worked out in the form of a bird's head, and the two perforations are claimed to be characteristic of this

[1] See Albert P. Niblack, The Coast Indians of Southern Alaska and Northern British Columbia (Report of the U. S. National Museum for 1888, Plate XXXIV).

type of canoe. It looks very much like the Lkuñgen (Songish) war-canoe.[1]

The paddles of the Kwakiutl (Fig. 118) are pointed, and have an angle at the widest part of the blade. In this they differ from the more northern paddles, which are always rounded. The paddle is used with one hand on the grip, while the other hands holds the shaft around its narrowest place, which is rounded. The paddlers sit on the thwarts, close to the side on the canoe, and the paddle is dipped deep into the water. The steersman sits in the stern, and uses a long paddle, of the same kind as the ordinary paddles. Generally he holds the paddle on the left-hand side of the canoe; but when turning sharply to the right, the paddle is held on the right-hand side of the canoe.

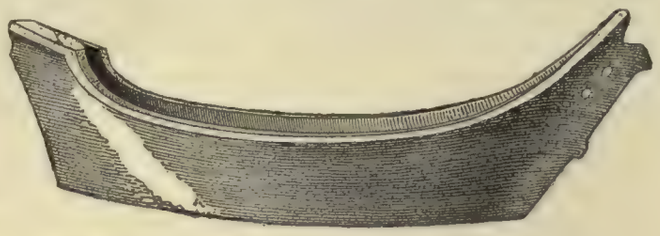


Fig. 117 ($\frac{1}{2}\frac{6}{5}\frac{}{8}$). Model of War-Canoe. Length, 64 cm.

Small canoes are sometimes propelled by a single paddler, who sits in the stern and paddles, generally on the left-hand side. After every stroke

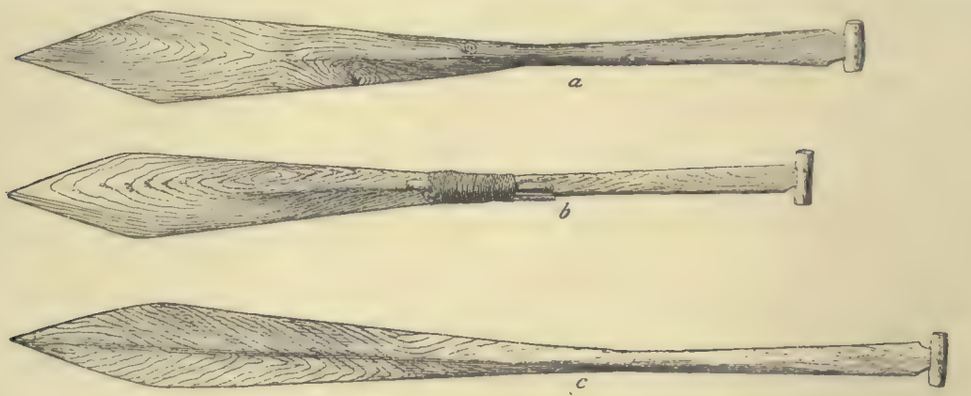


Fig. 118, *a* ($\frac{1}{3}\frac{6}{7}\frac{}{0}$), Paddle (length, 171 cm.); *b* ($\frac{1}{3}\frac{6}{7}\frac{}{1}$), Method of mending Broken Paddle (length, 162 cm.); *c* ($\frac{1}{3}\frac{6}{6}\frac{}{9}$), Hunter's Paddle (length, 187 cm.)

of the paddle, the paddle is turned in the water so as to bring the bow back into the right direction.

Modern canoes are propelled by spritsails, the sail being made of canvas. It is extended by means of a sprit, the lower end of which is inserted in a loop attached to the lower part of the mast. The sail is managed by means of sheets attached to the clews. It seems that the Northwest coast Indians had sails before the advent of the whites. During the middle of the last century the people of the west coast of Vancouver Island used mats for sails. These were made of regular square matting, and had the open-work border at the

[1] See model figured by me in Sixth Report of the Committee on the North-Western Tribes of Canada (Report of the British Association for the Advancement of Science, 1890, p. 566).

upper end which has been described on p. 391. A rope was passed through the meshes of the border, by means of which the sail was attached to a yard. The clews of the sail had very large meshes of the same kind, while the whole lower border was finished off like an ordinary mat. These meshes in the clews serve for attaching the sheets. Sails were also made of thin boards which were sewed together.

Sometimes the gunwale of the canoe was raised by the attachment of a board intended to prevent the waves from swamping the canoe.

In the bottom of the canoe there are generally some boards and mats to keep the freight dry, and intended to protect the walls of the canoe. When not in use, the canoe is kept wet, and is protected against the sun by spreading branches, boards, and old mats over it. In summer some water is poured into the canoe every morning, while in winter, when the water is liable to freeze, the canoe is kept dry.

The canoes are kept on the beach, in front of the house (Plate XXXII, Fig 1; see also Plate XXX, Fig. 2); and all larger stones are removed from the landing-place thus making a runway for the canoe, leading from high-water mark down to low-water mark. Old village sites may often be recognized by the presence of such canoe-runways. When the canoe is on the beach, it is generally supported on both sides by sticks, which keep it upright. The canoe should make a landing stern first.

The greatest danger in travelling by canoe lies in the liability of the cedar-wood to split, so that a canoe which sails close to the wind and strikes the waves may open and founder. In recent times some canoes have been provided with ribs made of barrel-hoops or similar material, which are nailed on from the inside, and which lessen the liability of the canoe to split. On the whole, however, this precaution is not liked by the Indians, because they claim that the canoe thus protected is too stiff, and is not easily sailed. For ascending rivers, punting-poles are used, the lenght of which depends upon the depth of the water (Plate XXXII, Fig. 2).

Particular care is taken with the hunting-canoe which is used in hunting porpoise and seal. This canoe also differs somewhat in type from the ordinary canoe, its sides being hardly spread at all.

Bailers are made either of cedar-bark or of wood. The type of cedar-bark bailer is represented in Fig. 119, *a*. A flat piece of cedar-bark is folded over at the ends and the ends are gathered, by which process the bottom of the bailer is rounded, and the gathered ends are tied to a cross-bar. Types of wooden bailers are represented in Fig. 119, *b* and *c*. A heavy stone, often grooved in the middle, serves as an anchor (Fig. 120); the anchor-line is generally made of cedar-rope.

Goods to be transported by canoe are generally packed in baskets or wrapped up in mats. Twilled mats and bags are preferred for this purpose,

because they offer better protection against moisture than ordinary matting. Fresh water is carried along in travelling-buckets. These differ from the ordinary

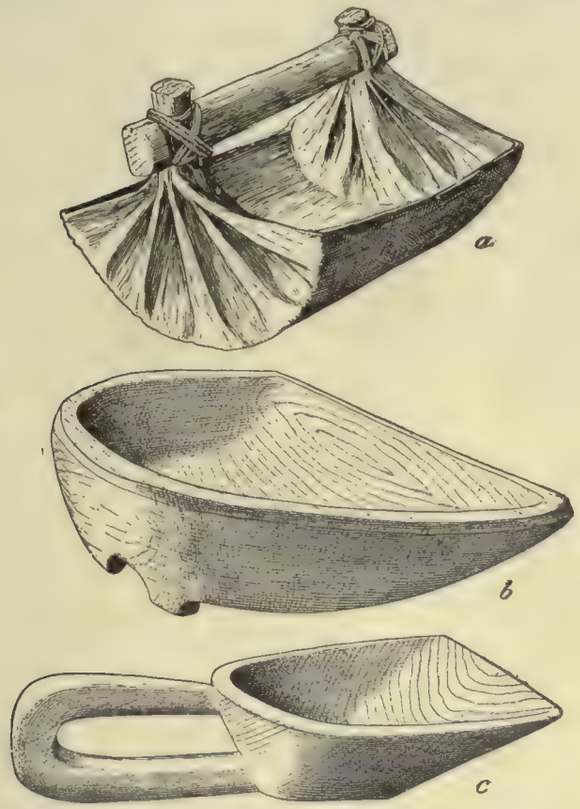


Fig. 119, *a* ($\frac{1}{9}\frac{6}{0}\frac{}{7}$), Bark Bailer (length, 24 cm.); *b* ($\frac{1}{8}\frac{6}{2}\frac{}{0}$), *c* ($\frac{1}{2}\frac{6}{1}\frac{}{3}$), Wooden Bailers (lenght, 20 cm., 26 cm.)

Fig. 120, *a* ($\frac{1}{8}\frac{6}{0}\frac{}{8}$), *b* ($\frac{1}{6}\frac{6}{2}\frac{}{1}$). Stone Anchors. Diameter, 19 cm., 22 cm.

buckets in having a flat top which is covered with a lid which is pegged on to the sides. The lid has a hole in the middle, through which a tube of elderberry-wood reaches down nearly to the bottom of the bucket, and projects slightly over the cover. The travellers drink by sucking up the water through this tube (Fig. 121).

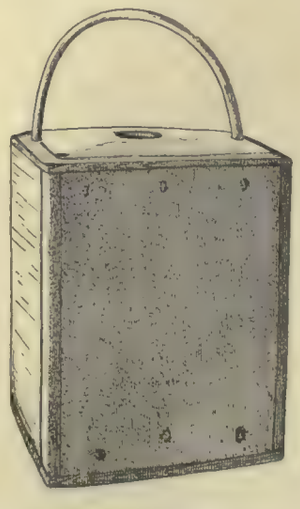


Fig. 121 ($\frac{1}{8}\frac{6}{2}\frac{}{3}$). Travelling-Bucket. Height, 22 cm.

Small tools, particularly fishermen's hooks and other utensils and the hunter's harpoons, are carried in a box of peculiar form (Fig. 122). These boxes are made of bent wood, which is kerfed in the manner indicated in Fig. 122, *c*. The box has a long narrow bottom, and a short, almost square opening, and it fits in the bottom of the bow of the canoe. A few boxes of this kind are cut out of a solid block of wood (Fig. 122, *b*). Hunter's boxes are often

square (Fig. 123). The top slants upward from the four sides, and is hollow below. The box is closed by means of two loops which are attached in the middle of the long sides, and which, when the box is to be closed, are tied up with a string.

When leaving with all their household goods, travellers sometimes make

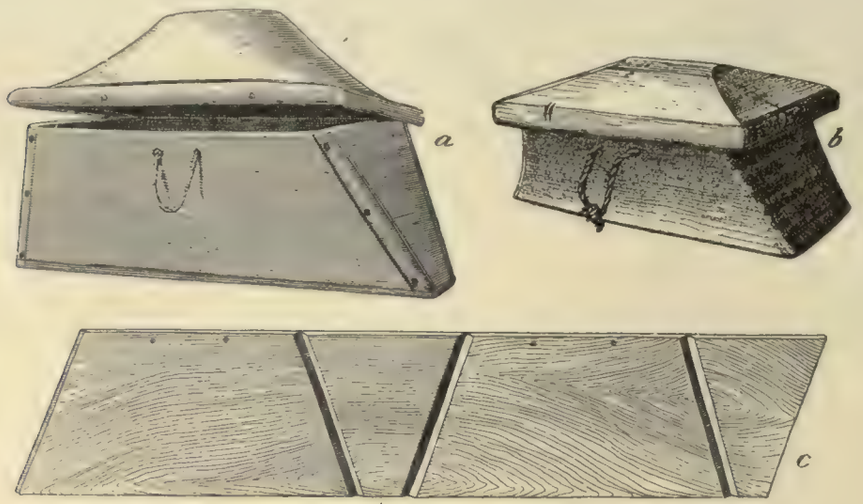


Fig. 122, *a* ($\frac{1}{5}\frac{6}{0}\frac{}{0}$), *b* ($\frac{1}{8}\frac{6}{2}\frac{}{1}\frac{}{5}$), Hunters' Boxes (length, 37 cm., 27 cM.); *c* ($\frac{1}{8}\frac{6}{2}\frac{}{0}\frac{}{5}$), Board for side of box.

a raft of two canoes. This is done particularly when the whole tribe move to the olachen-fisheries of Knight Inlet in the early spring. Poles about four fathoms long and one span thick are adzed off on one side so that they are flat.

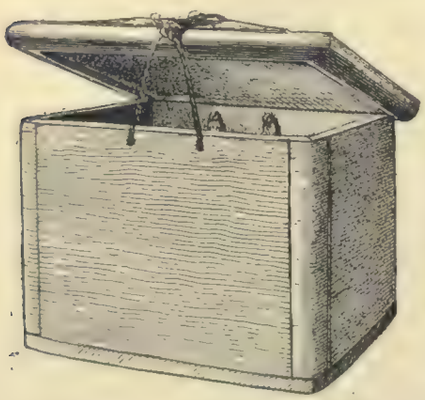


Fig. 123 ($\frac{1}{8}\frac{6}{2}\frac{}{1}\frac{}{7}$). Square Hunting-Box. Height of sides 14 cm., lenght 19 cm.; width 15.5 cm.

Two canoes are placed on the beach near high-water mark, about one fathom apart. Cedar boards about two spans in width are sewed to the outside of the gunwales of the canoes to make them higher. The space between the board and the canoe is caulked with soft yellow-cedar bark. Then the poles are placed on these boards flat side downward and just over the thwarts, to which they are tied firmly. This platform is covered with boards, which are tied to the poles. In the stern of the boat is the seat for the steersman. The boxes containing household goods are placed along the sides of the platform, the small ones towards the bow of the canoes, the large ones towards the stern. Bags and baskets are deposited on the front part of the platform. The front boards of the houses, which are taken along, are laid crosswise over the boxes. When there is a

moderate favorable wind, these boards are put on edge and are used as sails. The men generally sit in the canoes and paddle, while the children and women sit on the platform. When it is very windy, the boards of the platform are removed, because the raft might be broken by the waves rising between the canoes.

Driftwood which is to be used for fire-wood is transported in the form of rafts. The logs are placed side by side, and heavy logs are placed cross-wise over and under their ends. Then these pairs of poles are tied together with stout cedar-withes. The raft is propelled with paddles.

I have been told that beaver-hunters sometimes use canoes which are made of bark of the red cedar. These are about 4.5 metres in length. A tree of proper size is selected; and after a cut has been made around the tree near the bottom, and at a height of about 5 metres, a strip of bark about 10 cm. wide is taken out all along one side of the tree. Then a heavy wedge made of hemlock, or sometimes made of bone of whale, is pushed under the bark to peel it off, and the whole bark is removed all around the tree. The bark is put down sap-side down. At the points where the bow and the stern of the canoe are to begin, about one fathom from each end, poles are laid down under the bark, projecting somewhat on both sides. Another pair of poles are placed at the same places over the bark, and each pair of poles is firmly tied together with strong cedar-withes. Then several men stand on these poles and bend the ends of the bark completely over. After this has been done, the rough outer bark is split off. Then the whole piece of bark is turned over. Meanwhile a large fire has been started, and a number of round poles are cut as long as the width of the canoe. Then the sap-side of the bark is heated by the fire; and when it is hot, the bark-side is also heated. Then the sticks which hold it flat are removed, and the bark is folded up in the same way as the bark used for bailers. The bow and the stern are gathered together and tied up. Then the poles are sewed in at the edges of the bark. These serve as thwarts. No poles are inserted at the places where the bark has been folded over to mark the beginning of bow and stern pieces. These canoes evidently correspond to the "shovel-nose" canoes of the river tribes of the mainland, which are dug-outs with flat sides and flat stem and stern.

Transportation of goods by land is done entirely by means of carrying-baskets. These are made of spruce-root and cedar-withes, and are carried with a wide tump-line woven of bark of the red cedar (Fig. 124). Nearly all the carrying-baskets of the Kwakiutl are of the same type (see Fig. 79). The bottom is rounded. Carrying-baskets which are used for picking berries are made of a very fine bird-cage weave, while those used for carrying clams are very coarse. Two kinds of these baskets are distinguished, the large carrying-basket which is carried on the back; and the small one, which is

carried in the hand. The bottoms of the Kwakiutl basket are all rounded, with a "keel," while those of the Nootka have a square, flat bottom. Clam baskets, however, are sometimes made with a flat bottom (LEq!E'xsd), because they stand better. When the basket is very heavy, two carrying-straps are sometimes used, one passing over the chest, the other passing over the forehead. The carrying-strap is always woven like a diagonal mat, and the loose strands at the ends are twisted into ropes. In the specimen here illustrated two such ropes are made, while in heavy carrying-straps there are sometimes as many as four ropes, which are then twisted together into a single heavy rope at the end.

Fig. 124, *a* ($\frac{18}{5037}$), Carrying-Strap and Berrying-Basket (height of basket, 12 cm.; length, 17 cm.; width, 14.5 cm.); *b*, Mountain-Goat Hunter's Carrying-Strap (length of strap, 165 cm.; of rope, 120 cm.)

Mountain-goat hunters use a strap of the same make, which, however, is double (Fig. 124, *b*). It is made double the length of the ordinary strap, and a section in the middle about 25 cm. long is twisted into a rope in the manner just described. This strap is doubled so that the short rope in the middle forms one end; and the loop which is thus formed on one side is used for tying up the load of meat by means of the two long ropes in which the ends of the strap terminate. In mountain-climbing, hunters use a long pole.

I have not seen any snowshoes among the Kwakiutl, but it seems likely that rough broad snowshoes like those of the Nootka were used by them also.

VII. — CLOTHING AND ORNAMENTS.

Clothing. — The clothing of the Kwakiutl seems to have always been very scanty. They cover themselves only with a blanket and an apron. Even in the year 1900 it was not rare to see old men sitting in the summer-seats or walking on the beach, covered only with a blanket. While the northern tribes may have worn undergarments reaching to the waist, the Kwakiutl of the present day claim that in olden times they never wore anything except blanket and apron. In olden times the blankets were made of skin, but these have entirely gone out of use. Woven blankets made of bark of the yellow cedar are also extensively used. The upper straight edge of the blanket is generally about 150 cm. wide. The length from the neck to the lower

Fig. 125, *a*, Apron, made of Mountain-Goat Wool; *b* ($\frac{1}{10}$). Apron, made of Twisted Cedar-Bark.

border in the middle is from 105 cm. to 120 cm., from which point the lower border curves upward, leaving a straight edge at the sides, which is from 80 cm. to 100 cm. long. It has been pointed out before (see p. 396) that the technique and form of this type of blanket are very much like those of the blanket of the Tlingit, and that evidently the beautifully ornamented Chilkat and the cedar-bark blanket have had the same origin.

The apron (see p. 398) is made either of mountain-goat wool or of bark of the yellow cedar, which is twisted into strings (Fig. 125).

No moccasins or shirts were worn. It seems that the men had a custom

of wearing fur bands around the head to keep back the hair. In later times fur caps (Fig. 126) were also worn, but most of these belonged to ceremonial dances. In rainy weather the upper part of the body was protected by a cape (see Plate XXIX, Fig. 2) made in the same way as the cedar-bark blanket, with a hole just wide enough for the head to slip through, reaching down to the elbows, and wide enough at the lower end to give ample room for the arms to move (see p. 397). This cape was worn by women who went clam-digging and by hunters who went out in the canoe.

A belt was worn over the blanket. Formerly belts were made of seal-skin, those of the men of heavier skin than those used by the women. Others were woven of bark of the red cedar, and were made in the same way as diagonal mats (Fig. 127). These belts were sometimes finished off by twining with spruce-root, and the ends of the cedar-bark strips of which the belt was woven were made into a number of ropes, one for each stitch of twining. The belt was tied up with these ropes (Fig. 127, *c*).

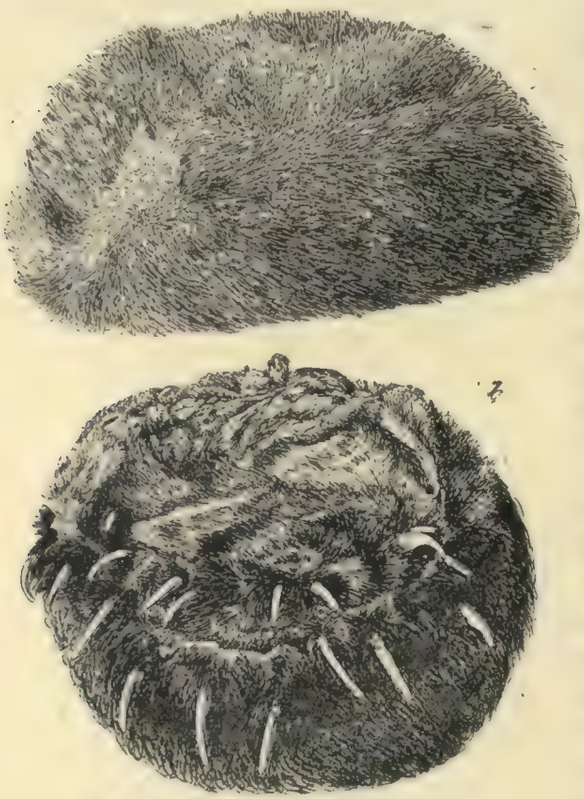


Fig. 126, *a* ($\frac{16}{1}$), *b* ($\frac{16}{2}$). Fur caps.

The rain-coat, made of matting, was also used (Plate XXXIII). When this coat is worn, the large double mat is put on the back, the shoulder-pieces are drawn down over the shoulders, and a string is passed through the right shoulder-piece under the left arm, over the back, and then through the end of the left shoulder-piece. Formerly a front-piece reaching down to the knees was sometimes attached to the back-cover.

When clam-digging or carrying baskets containing wet material, the woman wears a long mat, which is put on the back so that it reaches from the head down to the feet. Then the belt is put on rather high, and the top of the mat falls back over the belt.

Hats for protection in rainy weather were worn by the women. All the old hats were made of coarse cedar-bark, but in later times spruce-root hats of the same kind as those used by the Haida and Tlingit came into use (Fig. 128).

[1] See G. T. Emmons, The Basketry of the Tlingit. Mem. Am. Mus. Nat. Hist., Vol. III, p. 256.

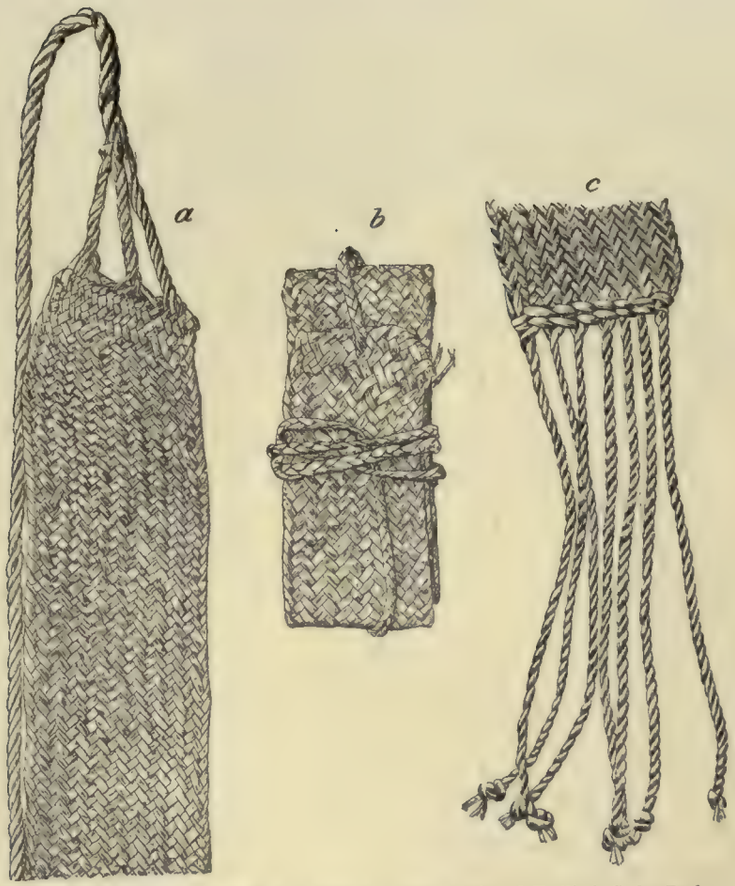


Fig. 127, *a* ($\frac{16}{11759}$), *b* ($\frac{16}{8268}$), *c* ($\frac{16}{11401}$). Belts made of Twilled Cedar-Bark. Length of belt in *a* 75 cm., of belt-rope 110 cm.; width, *a–c*, 9 cm., 7 cm., 7 cm.

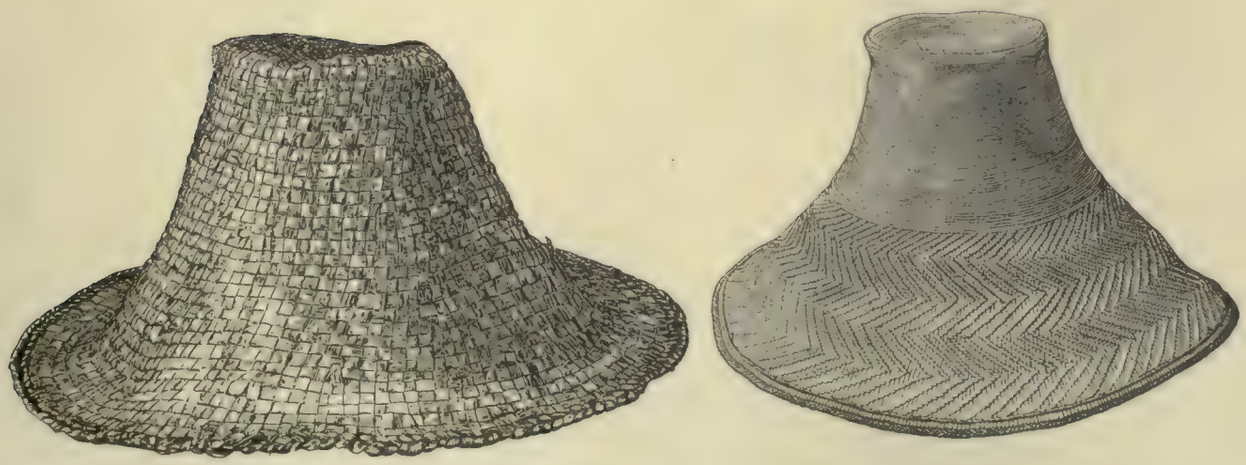


Fig. 128 ($\frac{16}{9991}$). Spruce-Root Hat and Cover.

In former times only few and large hats of this kind were found among the tribe, and these were worn by chiefs. Even now these hats are considered so valuable, that, when not in use, they are protected by a cover of cedar-bark.

Ornaments and Care of the Body. — At the present time very few ornaments are worn, but women always wear very tight anklets made of cloth. The Indians say that the object of this custom is to make the legs of women look different from those of men.

Ordinary arm-rings, wristlets, knee-rings, and anklets, which were worn by the women, were made like the belts of red-cedar bark. They were also woven of mountain-goat wool or yellow-cedar bark, which was handled in the same way as the strips of red-cedar bark. Rings made of wool were sometimes decorated with dentalia. Dressed skin (wā′dɛkᵘ) was also used for making arm and leg rings. The fringe of the anklets is always outside, hanging down over the ankles. In former times, copper and brass bracelets, arm-rings, anklets, and knee-rings were used extensively. The copper bracelets were made either of stout copper wire, somewhat rectangular in cross-section, or of twisted copper wire, which was sometimes turned around a stout central wire (Fig. 129). In olden times, bracelets were made of split and flattened mountain-goat horn, which was decorated by gluing on dentalia.

Fig. 129, *a* ($\frac{16}{8\,8\,7}$), Anklet made of Twisted Copper; *b* ($\frac{16}{8\,9\,8\,0}$). Bracelet made of Twisted Copper.

The septum was often perforated, and ornaments made of haliotis-shell were worn suspended from it (Fig. 130).

Fig. 130, *a* ($\frac{16}{9\,0\,0\,7}$ *a*), *b* ($\frac{16}{8\,0\,7\,8}$ *a*), *c* ($\frac{16}{7\,0\,0\,0\,7}$ *b*), *d* ($\frac{16}{7\,0\,1\,5\,8}$ *a*). Nose-Ornaments of Abelone-Shell. $\frac{1}{2}$ nat. size.

Strings of dentalia provided with tassels at their ends were used as hair-ornaments. The one here represented (Fig. 131, *a*) has tassels of blue and yellow crewell. In olden times, hair-ornaments similar to those of the Tlingit were worn.[1] One of these, made of copper, was found by Mr. Smith at Fort Rupert (Fig. 131, *b*).

Combs were made of yew-wood (Fig. 132). The prevailing forms have

[1] See Niblack, The Coast Indians of Southern Alaska and Northern British Columbia (Report of U. S. National Museum for 1888, Plate VI, Fig. 11).

either a square or a two-pointed handle-part. In Fig. 132, *c* and *d* show that the style of decorating the opposite sides consisted of vertical and horizontal designs, — one of the few cases of geometrical designs occuring among the tribe.

Men used to wear feathers in their hair, but I have not seen any feather ornaments in use. The hair of the face was removed by means of tweezers (k!ulā'yu). In olden times a pair of small mussel-shells were used for this

Fig. 131, *a* ($\frac{1}{13}\frac{6}{0}\frac{}{0}$). Hair-Ornament; *b* ($\frac{1}{0}\frac{6}{3}\frac{}{7}\frac{}{0}$), Copper Ornament found in Shell-Heap 1 mile East of Fort Rupert.

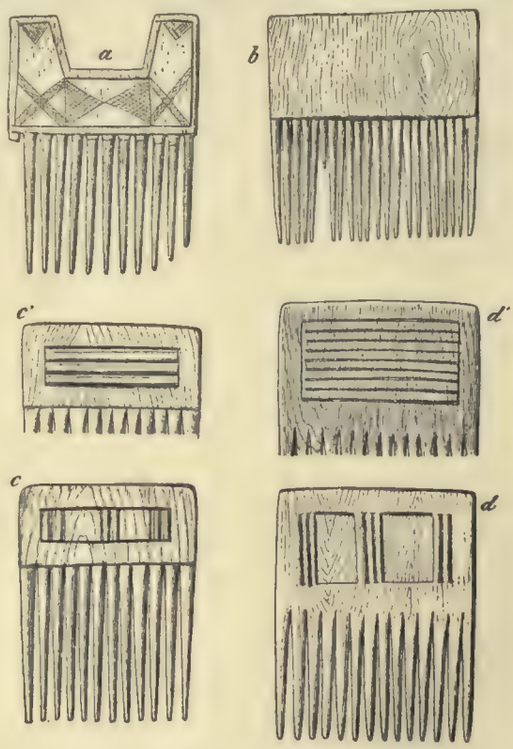


Fig. 132, *a* ($\frac{1}{2}\frac{6}{2}\frac{}{0}\frac{}{0}$), *b* ($\frac{1}{0}\frac{6}{3}\frac{}{1}\frac{}{1}$), *c* ($\frac{1}{0}\frac{6}{1}\frac{}{8}\frac{}{0}$), *d* ($\frac{1}{0}\frac{6}{2}\frac{}{3}\frac{}{5}$). Combs. $\frac{1}{2}$ nat. size.

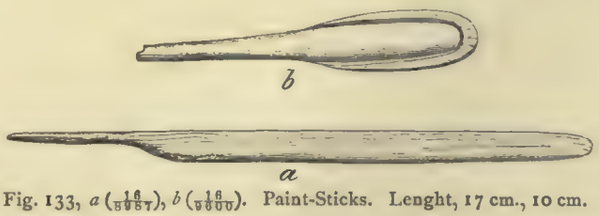


Fig. 133, *a* ($\frac{1}{0}\frac{6}{0}\frac{}{0}\frac{}{7}$), *b* ($\frac{1}{0}\frac{6}{0}\frac{}{0}\frac{}{0}$). Paint-Sticks. Lenght, 17 cm., 10 cm.

purpose. For painting the face, and particularly the eyebrows, small paint-sticks (Fig. 133) were employed. The face was generally first greased, and the paint was then applied with the paint-stick. Red ochre is commonly used for face-painting. Women use it also for painting the part of the hair, the hair being divided over the middle of the head and plaited into two braids. For face-painting a fungus (k·!ēts!) that grows on alder is also used.[1] It is roasted near the fire until it turns black. Then it is mixed with hemlock-gum and used as a protection against sunburn. This face-paint is called k!wā'kunwayu. Sometimes the gum is smeared on the face, and the

[1] See p. 402.

burnt fungus is powdered on; but generally both are mixed and heated in a clam-shell before being used. If no fungus is available, ochre or charcoal is used instead. This paint is removed with olachen-oil and soft white cedar-bark. Men powder the eyebrows, mustache, cheeks, and chin with spores of the puff-ball when they wish to have plenty of hair on their faces. Catfish-oil, which is used for anointing the hair, is scented with *Heracleum lanatum* L., which is boiled, pounded, and dried.

Women wash their faces with tallow which is kept in a basket (qā'pâla). First the face is rubbed with soft cedar-bark, then the tallow is smeared on and is rubbed off again with clean cedar-bark. Sometimes they wash the face with urine; but this is mostly done by old people, because it is believed to improve the eyesight. Young people also wipe their faces with sphagnum (dā'dēqam). After washing, the moss is put back in the place from which it was taken, then the skin will be as light as the color of the moss. All these materials are kept in pouches (see Fig. 101).

In washing, they proceed in the following manner. They sit down and wash their hands. Then they sprinkle water four times on the right shoulder, and next on the left. After this they rise and wash the chest. Then the face is washed, which is rubbed with the thick of the thumb. In washing the back of the head, they lean backward and wash it from below. Then the sides of the head are washed, while the head is leaned sideways. Then the hair is tied up on each side of the head until it is dry. Sometimes urine is used in place of water. In this case the body is rinsed with fresh water after washing. The root of a plant called nū'snɛlaa is rubbed in water and gives a foam. This is also used for washing, and serves at the same time as a love-charm.

The teeth are not cleaned, but the mouth is rinsed every morning before the first meal.

Young people generally bathe in fresh water, and only old people bathe in the sea. Young people should bathe every morning before breakfast, on account of their prospect of coming into contact with the supernatural world. Bathing removes the human smell; and when they are fresh and clean, the spirits will come to them and warn them of approaching danger. Ceremonial purification generally requires washing in ponds, and rubbing the body with hemlock-branches until blood is drawn. This ceremonial purification appears very frequently in the traditions of the people.[1]

Hunters and warriors must not comb their hair. After having washed, they pull up the hair in bunches to muss it, so that their head will look large. Sometimes the hair is all smoothed down backward. Warriors smear their faces with tallow, over which they rub coal made of soft red cedar. Other kinds of wood are not used, because they produce itching. After

[1] See Vol. III of this series, pp. 61, 124.

painting, they shut their eyes, hold both hands in front of the face, and blow against them to remove the loose particles of paint. Then they rub the face until it begins to shine. Finally they wet the nail of the little finger in the mouth, and with it put on designs by scratching lines on the background of black paint. A warrior who has killed a person will paint with the blood of his victim. As a protection against mosquitoes, the hair is divided in the middle, the two parts are crossed over the forehead, and are then tied around hemlock-branches.

The Kwakiutl have been in the habit of deforming the head until quite recent times. I shall describe the methods of head-deformation in connection with the description of the cradle. On the whole, the result of the pressure as applied by the Kwakiutl is that of narrowing the forehead and lengthening and raising the occiput, producing the so-called "sugar-loaf" forms of head (Plate xxxvi). It would seem that particularly strong pressure was applied by the tribes of the extreme northern part of Vancouver Island and by the Koskimo, while the deformation of the head practised by the southeastern Kwakiutl tribes was not so strong. It seems that everywhere the deformation was more marked in women than in men, although I have seen a number of old men with markedly deformed heads. I have published a number of deformed skulls of this type before, and shall discuss the modification of type brought about by this procedure in connection with a discussion of the physical anthropology of the North Pacific coast. I have also pointed out before that the peculiar method of deformation brings it about that the "sugar-loaf" head is confined essentially to the northwestern Kwakiutl, while the more southern tribes use types of deformation resulting in a flattening and broadening of the head.[1]

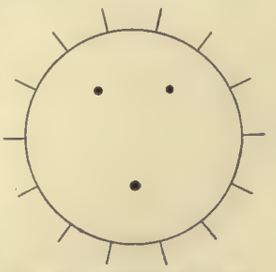


Fig. 134. Tattooing representing the Sun.

Among other deformations, the perforation of the septum of men for the suspension of nose-ornaments is particularly noticeable. Perforations of the ear do not seem to have been as prominent as among the northern tribes.

Tattooing also does not seem to have been prominent in former times. I have noticed among a few people a line connecting the two eyebrows. The Si'sinłē[q] group of the Nimkish used a tattooing representing the sun, which was made on the lower arm (Fig. 134).

Ideas of Beauty. — A flat forehead is considered pretty, and people with a flat forehead are called "well-cradled." A handsome man should have a round face, the nose and adjoining parts of the cheek not too prominent,

[1] See illustrations of flattened heads in F. Boas, Chinook Texts (Bulletin 20 of the Bureau of American Ethnology, frontispiece); also F. Boas, Kathlamet Texts (Bulletin 26 of the Bureau of American Ethnology, frontispiece).

and a delicate nose. Some people like a fair complexion, but others prefer a dark complexion. Long brown hair is considered a mark of particular beauty. The cheeks should show a nice rounding towards the neck. The ears should be neither too large nor too small. The lobe of the ear should be well developed. The tongue ought to be small. On the other hand, men are considered ugly who have a hump in the middle of the nose and a hanging point. A snub nose, a nose with thick end, and a long straight nose, are also considered ugly.

The ankles must be small, so that they hardly project above the adjoining parts of the foot. The instep must be high and taper suddenly down to the toes. The calves of the legs of women must be strong, but the lower part of the leg must be thin. The wrist also must not be prominent, but smooth. By wearing tight bracelets and anklets the attempt is made to give the wrist and ankles the desired form. The tips of the fingers must be pointed, while the fingers should be thick near the knuckles. While some people think a small waist pretty, others prefer a large waist. The hips should be broad. The hands of a man should be neither too large nor too small. On Plates XXXIV and XXXV are presented a man and a woman who are considered particularly good-looking.

CRADLE. — The cradle of the Kwakiutl (Fig. 135) has the well-known boat-shaped form which is characteristic of the cradles of most parts of the North Pacific coast. The sides of the cradle are bent of two pieces of cedar-wood; the head-piece, which is considerably higher than the sides and the foot-piece, being generally made of a separate board.

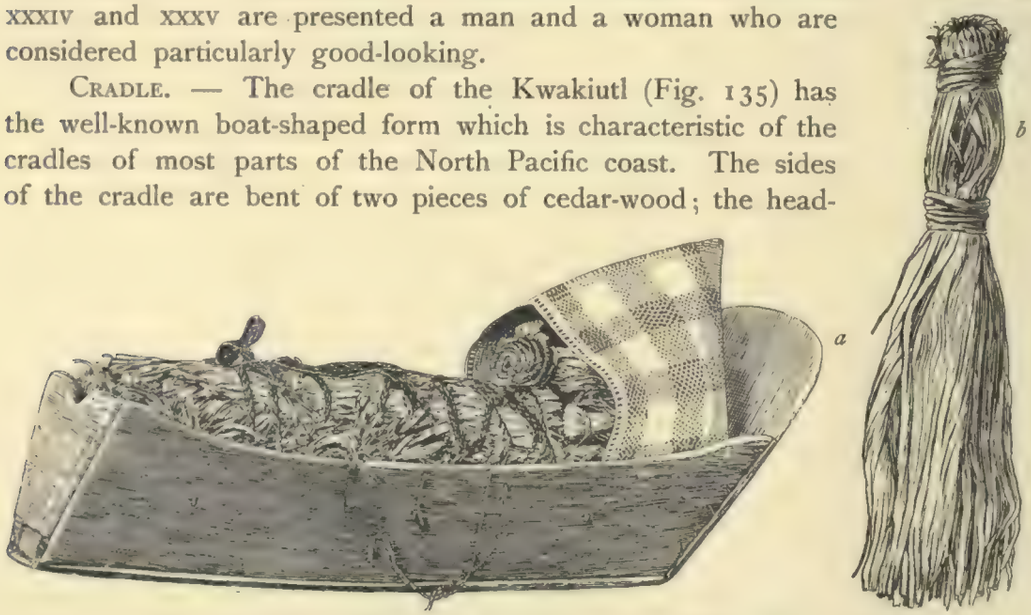


Fig. 135, *a* ($\frac{1}{17}\frac{1}{16}$), Cradle (length of bottom, 73 cm.; greatest width, 23 cm.); *b*, Cushion for deforming the head.

In the cradle here illustrated the bedding is supported by a framework placed inside of the cradle, about 8 cm. above the bottom. This framework rests on three ropes made of cedar-withes, which pass through the sides of the box. Their ends can be recognized in the illustration. The ropes have been described before (see p. 380). This support of the bed gives it some

elasticity. Next a cross-bar of cedar-wood is placed alongside of each withe rope. A number of thin pieces of elder-wood are laid over the three strips lengthwise of the cradle, and are lashed to the cross-bar and to the ropes by means of long strips of cedar-rope (in the present specimen cloth), which is crossed over each twig and under the cedar-withe ropes and cross-bar. These elder-twigs extend as far as the cross-bar nearest to the head-board of the cradle. The head-rest is made in the following manner. A rope of cedar-withe is carried on each side of the head-piece from the end of the cross-bar nearest the head to a drill-hole made in the lower corner of the corresponding side of the head-board in the manner before described. These ropes are connected by a cedar-rope, which crosses from one side to the other in zigzags, and forms a half-hitch knot whenever it turns back from one cedar-withe to the one on the opposite side. Thus an elastic rest for the head is formed, which slants downward toward the head-end of the cradle. Along each side of the cradle, near the cross-bars runs a rope to which a number of loops are attached with half-hitch knots, by means of which the child can be laced in. Attached to the middle of the cedar-withe ropes supporting the head-rest are, on the left side three strips of soft deer-skin about 6 cm. wide, on the right side four such strips. Under the zigzag rope which forms the head-rest some soft shredded bark of the red cedar is placed. The frame, made of elder-berry-twigs, is covered with a number of broad strips of the best kind of bark of red cedar, which are placed lengthwise. These are covered with a thick layer of shredded cedar-bark laid crosswise, which is cut in pieces as long as the cradle is wide. This material extends up to the cross-bar nearest the head, and forms the bedding of the child. The head part is also covered with bedding made of shredded cedar-bark. This consists of a considerable number of layers of shredded bark of the red cedar, the first layer lying lengthwise, the next layer crosswise. After four layers of this kind, a couple of strips of unshredded cedar-bark are put in, and over these more bark is placed lengthwise. Then the child is placed in the cradle, the head slanting a little downward, and resting on the thick cedar-bark pillow. Then the two innermost strips of deer-skin are drawn tight around the forehead, the one on the left side, which is longest, being put on first. Next a small bundle of shredded cedar-bark folded over in the middle and tied at two points (Fig. 134, *b*) is placed over the skin band on each side of the head, so that the doubled end rests against the temples. Then the next skin band is laid over the forehead; and a larger bundle of doubled cedar-bark, consisting of a number of layers placed one over the other and tied together near one end, is placed over the forehead, the doubled end resting just over the nose. This is held down by means of the last skin strips. Finally a plaited cedar-bark rope is tied over the head, being laced through the loop nearest the head-end. Then the quilt, made of skin or of cedar-bark, is placed over the

child, and the infant is laced up with plaited cedar-rope, one rope being attached to the foot-end. This is used for lacing up the legs of the child. A separate rope is used for lacing up the upper part of the body. This is attached near the middle of the cradle.

A small hood made of cedar-bark matting is placed over the head of the child as a protection against light and insects. The whole cradle is suspended by means of four cedar-bark ropes from a small yew-tree with a single branch. A rope is attached to the extreme point of the branch, by means of which the cradle is rocked up and down. Very often, when the mother is working, she will tie the rope to the toe of her foot and rock the child by moving the foot up and down (see Plate XXVII, Fig. 2).

VIII. — FISHING, AND HUNTING SEA-MAMMALS.

Fishing is carried on by means of traps, nets, hooks, and with the spear. In some cases also combinations of fish-weirs and nets are used, or fish are speared or hooked in pounds connected with traps.

Fish-Traps. — A considerable number of distinct types of fish-trap are used by the Kwakiutl. One of the most complicated and characteristic types is represented in Fig. 136. A number of hemlock-stakes are driven into the bed of the river, and frames made of split wood or of poles are tied against them. Generally this fence (*a*) extends some distance beyond the low-water

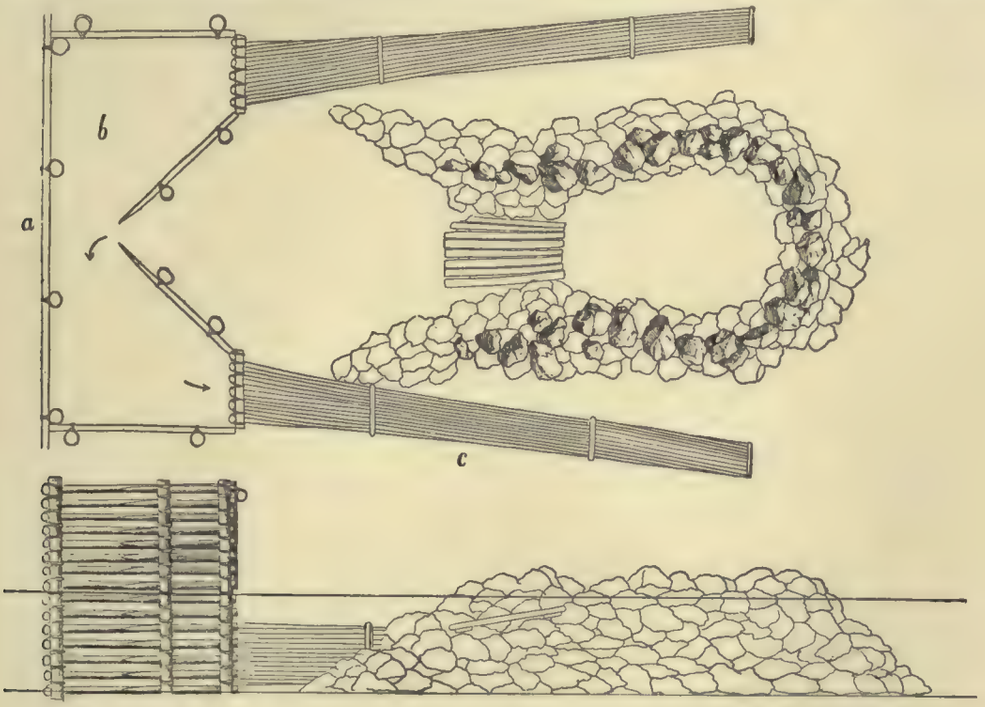


Fig. 136 ($\frac{1}{16}\frac{6}{61}$). Plan and Elevation of Salmon-Trap in Nimkish River (xō'ᵋlōs and mā'lîs).

banks of the river, in order to prevent the salmon from passing it when the water is high. In the middle of the river, below the fence just described, a large box (*b*) is built of frames tied to stakes. The entrance to this box is formed by two converging frames, which leave only a narrow entrance. When the fish swim up the river, they enter through these converging frames, and find themselves in the large box. On each side of the converging frames there are two short frames with openings that lead into long fish-baskets (*c*) from three to four fathoms long, which are so narrow that the salmon cannot

readily turn in them. The entrance to these fish-baskets is square. The fish swim into the baskets, and are unable to turn back. This kind of trap is called xō′ᵍlōs. The cylindrical fish-basket which is used with it is called lē′xsid. On top of the fish-basket, near its narrow end, is an opening through which the fish can be removed without taking the trap out of the river.

In combination with this trap another one is used, called mā′lîs. It consists of a circular stone dam with flaring entrance, which forms a shallow basin. In the narrow entrance to the basin a platform of slender, smooth poles is placed about 7 cm. under water at the end turned towards the basin, while the upper end is considerably deeper. The salmon which do not enter the box above the basin turn back, and are guided by the wings of the stone dam into the basin. They are carried over the pole platform, and find themselves in the shallow water of the basin, from which they are unable to make their escape again. The baskets used by the Koskimo and by the Kwakiutl in Hardy Bay are from a fathom and a half to two fathoms long, while in Nimkish River very long baskets are used.

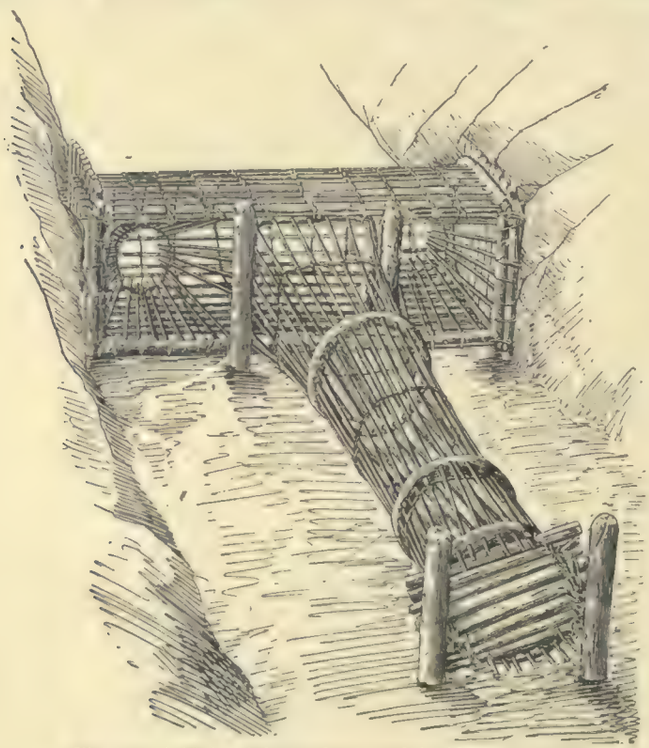


Fig. 137 ($\frac{1}{9}\frac{6}{7}$). Salmon-Trap used in Narrow Brooks.

Sometimes the Kwakiutl also make a wooden basin instead of the one made of stone which I have just described. This is fenced in with stakes and poles or frames, while the bottom is entirely filled with long poles, so that the fish have not water enough in which to move. The basin is covered with hemlock-branches to protect it against attacks of eagles and bears. These basins are used only in water with very strong current. Sometimes in place of the basin a fish-basket in used.

A trap used in narrow rivers is illustrated in Fig. 137. It is called dᴇgwī′s. Here the salmon enter a large closed basket with converging entrance, from which they are turned into a long fish-basket. This trap is kept in place between stakes, and is anchored with heavy stones.

The Dᴇna′x·daxᵘ often use a large fish-basket (Fig. 138), which is placed

either in the middle of a dam, as shown in the illustration, or at the apex of two converging fences. In both these cases the fish are led right into the conical entrance to the fish-trap, from which they cannot escape. This trap is also used in rivers with a strong current.

A trap similar to the xō′ᵍlōs is also used in the inlets of the mainland, particularly in G·iō′χᵘ. It is called ᵍmɛ′ᵍwa. It consists of a framework forming a box of the same type as the box of the xō′ᵍlōs. The frames, however, are attached to a bottom, which is anchored on the rocky ground of the river. The box is about twelve fathoms long, and six fathoms wide at the widest part, while the distance from the entrance of the converging frames to the

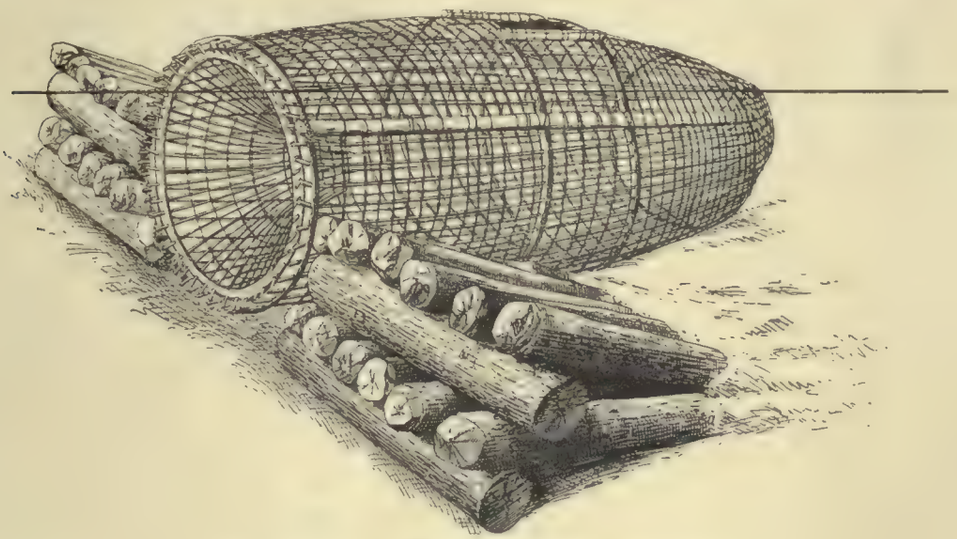


Fig. 138 ($\frac{6}{75}$). Dam and Fish-Basket. Dɛna′x·daχᵘ.

upper fence is about two fathoms. This trap has no fish-basket attached to it, but the salmon are speared in it. The frames are more than a metre high.

Related to this type is a trap of the Koskimo, which is put up on the beach above the low-water line. Four frames are tied together in a square, and covered with poles or with another frame, which is weighted down with stones. At the land-side there is a small entrance. Herring-roe is put inside as a bait. The fish enter the trap, and are left dry when the tide goes out. This trap is used by poor people for catching perch.

The mā′lîs is also used under small cascades; for instance, in Laᵍwu′nɬ, at the north entrance of Drury Inlet, where a deep pool is formed under a small cascade. Under the pool there are very shallow rapids. Here large stones have been put down across the river, and under these a number of basins of the mā′lîs type have been built. The fishermen throw stones into the pool just under the cascade and drive the fish into the mā′lîs, where they

are killed with clubs. Similar places are found in Shelter Bay (Ā′wats!ē) and at Ō′ᵉyaa in Drury Inlet.

A trap related to the mā′lîs is shown in Fig. 139. Here a fish-dam (amā′la) is built across a narrow river, thus creating below the dam shallow water and rapid current, and preventing the salmon from ascending over the dam. For this reason the dam is generally built so that it overhangs. The salmon are either speared just at the pool under the dam or a xō′ᵍlōs and a mā′lîs are built under the dam.

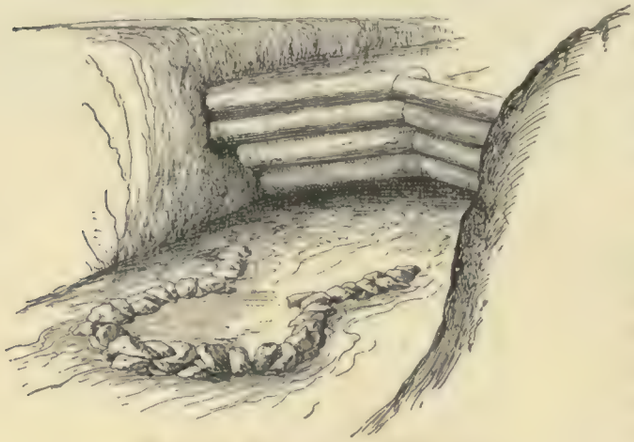


Fig. 139 ($\frac{1}{1}\frac{0}{0}$). Dam and Fish-Trap.

A peculiar trap called simply ɫā′wayu is used in the Nimkish River at Ōdzâ′lîs. On its lower side a stone dam is built which reaches to the surface of the water. Just above this stone dam a box eight fathoms wide and two deep is built, consisting of frames tied to stakes (Fig. 140). On one side of this box two stout poles are driven into the river-bed, which serve the purpose of tying up the fisherman's canoe alongside of the trap. The salmon jump into the trap across

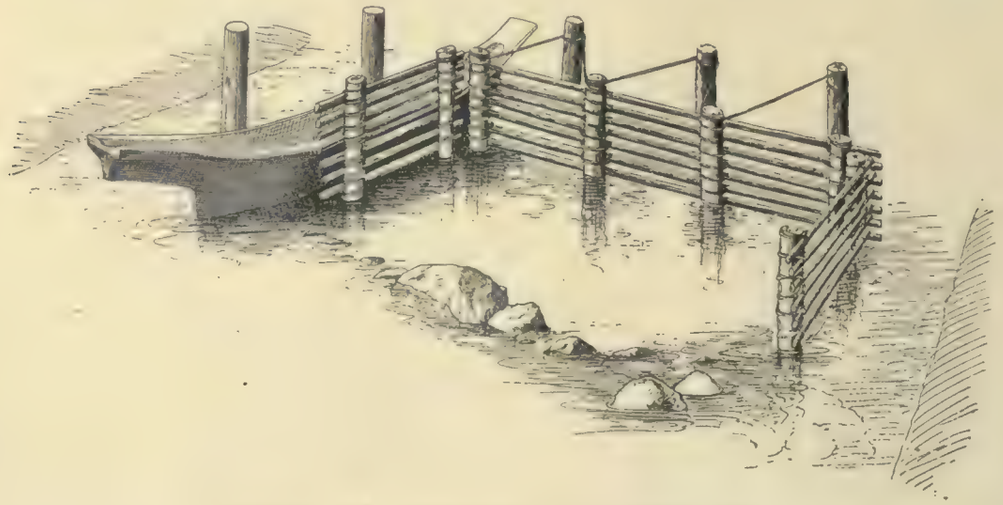


Fig. 140 ($\frac{1}{1}\frac{0}{0}$). Salmon-Trap. Upper Nimkish River.

the stone dam. Near the side where the canoe is tied up, the bottom of the river is covered either with white clam-shells or with a rough matting made of white wood, which is weighted down with stones. The salmon are easily seen over the white ground, and are speared by the fishermen.

Traps are also used on the banks of rivers in tide-water (Fig. 141). They consist of simple wing-dams extending sometimes sixty or seventy fathoms out from the beach (p!aō's). The salmon get into the pools formed by these wing-dams at high water, and are cut off from retreat with the receding ebb-tide. Then they are speared or clubbed. The dams are built on places where the salmon are in the habit of congregating before they go up the river. They are also built of stakes which are driven into the river-bed, reaching to about 40 cm. under high-water level. In some rivers a great many wing-dams are built close together (Fig. 142).

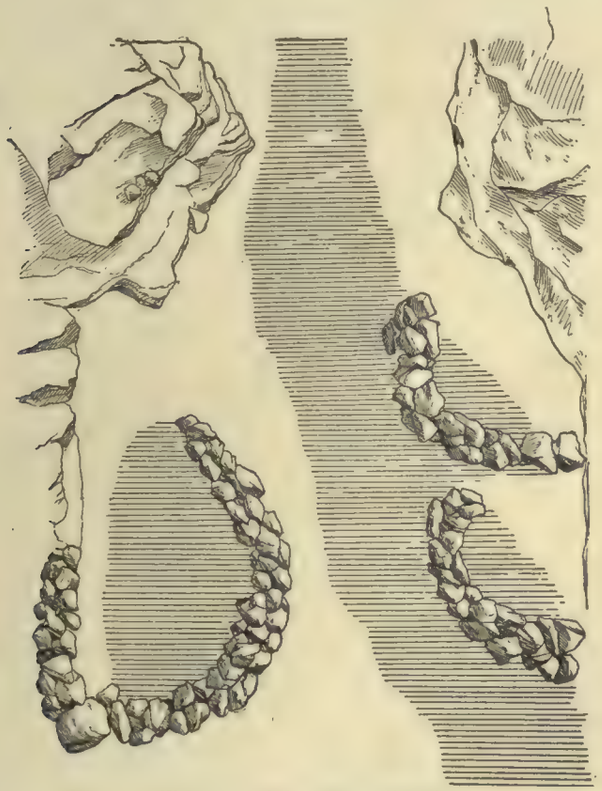


Fig. 141. Salmon-Trap (p!aō's).

Fig. 142 ($\frac{1}{96}$). Salmon-Trap.

It is said that the Koskimo sometimes put up traps in cascades. These are large, square boxes made of frames, open at the top, which are hung up by ropes from the sides of the cascade. The salmon which ascend are sometimes swept back by the river, and thus fall into the trap.

Nets. — Nets are used particularly in fishing for olachen. I have described before the method of making the large olachen-net (tā'gał). This net is made of nettle-twine, and is conical in form. Its tip is open and about 30 cm. in diameter; while its mouth, when stretched out, is more than 2 metres in diameter. It has been stated that the thin or "tail end" of the net

is made in very small meshes, and that the sizes of the meshes increase towards the mouth of the net. The various parts of the net are called by the Indians "the mouth of the net" (a^{s}waxsta^{s}yasa tā′gałē); the next portion, "the small of the back of the net" (a^{s}wagoxɬa^{s}yasa tā′gałē); the third part, where the net becomes still narrower, "the knee of the net" (ōkwä′x·a^{s}yasa tā′gałē); and the end, finally, "the tail of the net" (ō′xsda^{s}yasa tā′gałē). The mouth of the net is attached to a strong rope made either of cedar-withes or of cedar-bark. Five-strand ropes of cedar-bark are used for this purpose. This rope is of the same length as the mouth of the net. It is spliced in the form of a ring. When the "mouth of the net" is to be hung to the rope, it is put up extended over the ends of two sticks which are driven into the ground, it is laced on with a netting-needle and heavy nettle-twine, being hung on with every second mesh. While the net is hanging this way, the net-rings (waswuk·lā′latsa tā′gałē, "ear-rings of the net") are attached to the rope forming the mouth, one at each pole along which the rope is extended. These rings (Fig. 143) are made of cedar-branches about four spans long. Near the end of the branch a square notch is cut out, and a corresponding notch is cut on the other end, but on the opposite side of the branch. The branches are steamed, and a form is laid out on the floor of the house by means of strong stakes, which are driven deep into the ground. As soon as the branch is pliable, it is bent around this form, and the notches at the ends are hooked into each other. After the branches have cooled off, they are heated again over a fire and rubbed with tallow. Then they are tied with cedar-withes and put back over the mould until they are quite cool. When the net is in use, the mouth is spread open by means

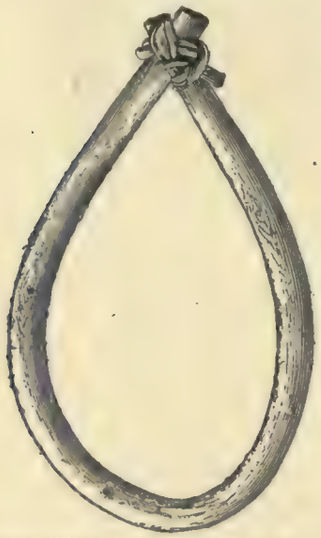


Fig. 143 ($\frac{1}{7}\frac{1}{10}$). Net-Ring. Greatest length, 39 cm.

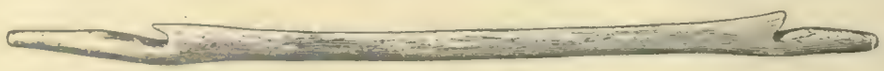


Fig. 144. Spreading-Stick. Length, 65 cm.

of a pair of sticks with two notches (Fig. 144), made of red pine, and about five spans long, which have been kept for some time over the fire until they have become quite sooty, so that they are waterproof.

Two other small nets are used in olachen-fishing. The first of these, called xō′dayu, has a square mouth. The net is made with very small meshes, and its standard measurements were given to me as four spans long and six spans around the mouth. In former times the handle of the net consisted of a

hemlock-pole about two fathoms long. Near the end of it a notch was made, and a little over a span above this notch a second notch was made. Into these two notches fitted the two spreading-sticks of the net, which were at right angles to the handle, and which had corresponding notches. They were about half a fathom long, and were tied to the handle-pole at their middle, so that the handle-pole extended right across the centre of the net. The net itself was strung on a fairly strong rope, which was laced to the spreading-sticks, so that the sides of the net were held apart only by the rope on which it was strung. Since about 1860 a change in type of these nets has been made. Instead of the rather insecure attachment of the spreading-sticks to the handle, the spreading-sticks are placed between two curved poles (Fig. 145). About one span from the end these are slightly enlarged, and have a mortise into which the spreading-stick is inserted with a tenon. The net is attached to the spreading-stick and to the curved ends, while the lower end of the net is stretched only over the string to which it is attached. The curvature of the side-sticks, and the length of the net, are such that when the handle-ends are drawn together, the mouth of the net is very taut. The curved side-sticks are pointed at their ends, so that they can be pushed into the bed of the river, the net being extended along the bottom.

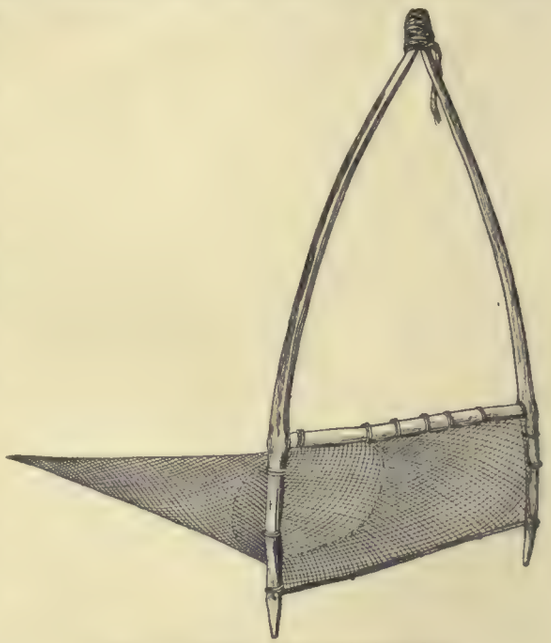


Fig. 145 ($\frac{1}{21}\frac{6}{1}$). Small Olachen-Net.

Another olachen-net is used without a handle-pole. It is called pɬɛ́'gwayu by the Kwakiutl, or dɛx·wḗ'layu by the Nimkish, Mamalēleqala, Łauitsis, Mā́'diłbē, and Qwḗ'qsotɬēnoxᵘ. This net also has meshes of small size, but it is larger than the one just described. It is extended between two diverging poles, which are about three metres long and have forked points. About half a metre from the handle-end of these poles, notches are cut, over which a cross-pole about 60 cm. long is laid. It has notches about 40 cm. apart, corresponding to the notches in the net-holders. At these places the long net-holders and the crossed stick are firmly tied together with cedar-withes. Then the net is attached to the long net-poles, and the handle-end is drawn firmly together, by which means the mouth of the net is opened and fully extended. It is held at the cross-bar and at the end of the net-poles where they are tied together.

In olachen-fishing a combination of weirs and nets is used. In the river of Knight Inlet a long fence is built, extending from one bank down river at an angle of about 45° to beyond the middle of the river. Starting at the opposite bank, another fence is made running downstream, and also forming an angle of 45° with the bank. At the place where these two fences converge, an opening about two metres in width is left; and here four stout poles are driven into the river-bed, between which the canoe is fastened (Fig. 146). A number of pairs of wing-dams are built in this manner, each pair belonging to one fisherman. These fences are made of hemlock, spruce, or alder trees, which are driven into the bed of the river and interwoven with wicker-work of hemlock and spruce branches. The stakes of the fence stand about one metre apart, and are about a metre and a half long. On top they are often held together by long poles which are tied on with ropes of cedar-withes. This fish-weir is used when the tide is running out strongly. The fisherman stands in the middle of his canoe at the outlet of the two

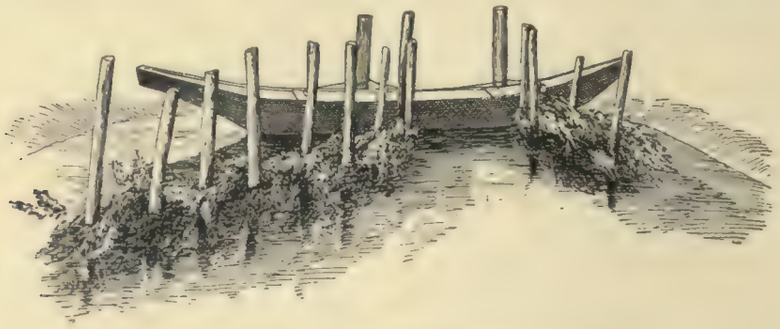


Fig. 146 ($\frac{1}{2\,1\,0\,5}$). Weir for Olachen-Fishing.

converging wing-fences, holding the bag-net (p!ɛ′gwayu), which has been described. The fish drift with the tide into the net, which is emptied every few minutes into the canoe. As soon as the tide begins to rise, the canoe is untied, and the fish are taken home.

Another kind of olachen-fishing is done with the large net (tā′gaɬ). In fishing with this net, a place is selected where the falling tide runs very strong. The canoe is anchored or tied to a stake about ten fathoms above the place selected, and is allowed to drift down with the tide. Two net-posts are driven into the river-bed. These are generally driven two or three feet into the ground. The distance between the two net-posts equals the width of the mouth of the net. Then the rings of the net are put one on each post. The net is tied to the rings, and its mouth is spread with the spreading-sticks. Then the rings are pushed down under water with a long pole which has a hook and a notch at its lower end, and which serves both for pushing down the net and for lifting it. When the net is pushed down, its thin end is tied up with a strong rope. The strong tide takes the net down river, and the

fish drift in towards the tail of the net. The fish are taken out in the following manner. The net is taken up with the hook about 1.5 metres from its tail-end, which is then lifted into the canoe. Then the end is untied, and the fish run out of the net into the canoe. Then the end is tied up again, and it is thrown into the water. Sometimes the fish are so plentiful that the mouth of the net has to be pulled up over water, or the spreading-sticks have to be taken out, because the fish run in so fast that they cannot be taken out quickly enough. If this is not done, the net-posts are liable to be torn out of the ground.

The dip-net (p!ɛ′gwayu) is also used in a different manner. The fisherman and his wife go out together, and the canoe is headed downstream. The woman at the same time holds the canoe against the stream by poling. On the upper end of her punting-pole a piece of hemlock-wood about 20 cm. long is tied crosswise. The man, who stands in the bow of the canoe, facing the stern, puts the dip-net down into the water on his righthand side, at the same time steadying the canoe with a punting-pole held in his left, which prevents it from swinging out. As soon as he puts his net into the water, the woman strikes the water with the top of her pole, thus driving the olachen down into the net. When the fish are in, the man lifts the net out of the water, resting it against the gunwale of the canoe. Then the fish are thrown into the canoe. Sometimes a whole canoeful may be obtained in this way in half a tide.

Fig. 147 ($\frac{1}{11}\frac{8}{17}$). Fish-Basket. Diameter, 45 cm.

The small bag-net (xō′dayu) is used particularly at the time when the olachen first arrive at the river. The first sign of the coming of the fish is the appearance of swarms of gulls which follow the shoals of fish. At flood-tide, when the tide runs against the river, the men go out in their canoes to a place where the tide is running strongly, and where the water is therefore

rather deep. The canoe is tied to a branch of an overhanging tree or to a snag, and the fisherman takes his seat in the stern of the canoe, facing the incoming tide. Then the net is pushed up river through the water like a paddle, care being taken that the points of the net-holder reach the bottom of the river. When the fish are plentiful, the net will come up half full of fish.

Round fish-baskets are used for catching kelp-fish *(Pleurogrammus monopterygius)*. These baskets (Fig. 147) are made in the same manner as spruce-root baskets, the warp and woof consisting of cedar-withes or halved spruce-root tied with red cedar-bark. The warp-strands are all placed radially and tied firmly together with a thick wrapping of cedar-bark. The warp-strands are all placed with the bark outward except one strand, which is wrapped around crosswise, and which serves as a starting-point for changing the direction in which the woof-strand is wrapped. This strand is marked *a* in the illustration. The woof-coil is placed with the bark-side inward, so that the halved flat sides of warp and woof lie against each other. A twisted rope made of two strands of cedar-bark is tied to each side of the fish-basket.

Fig. 148 ($\frac{1}{11}\frac{6}{53}$). Crab-Net. Diameter, 48 cm.

When the fish-basket is being made, the mouth stands outward. After it is finished, it is pressed inward. The edge of the mouth is made in the same way as the edges described before. The basket is attached to a cedar rope which is fastened to a float. Mussels and sea-eggs are put into it as bait, so that the bottom is nearly covered. Then it is let down to the bottom of the sea. Sometimes devil-fish are also caught in these baskets. This kind of fishing is called LEqa'.

Crabs are caught in rough nets made of cedar-bark (Fig. 148). These are let down to the bottom of the sea, bait being placed in the net. When the crab is in the net, it is hauled up.

HOOKS. — Halibut, codfish, and kelp-fish are caught with hooks. The

bending of the shank of the halibut-hook has been described before (see p. 332). When the hook is finished, a groove is cut in the barb-end; and the barb, which consists of a splint of a long bone, is tied in firmly with spruce-root (Fig. 149). These large halibut-hooks are always used in pairs, being tied to a double cross-piece, the making and use of which will presently be described (Fig. 153). Hooks used for codfish are smaller than those used for halibut, but they are also used in sets of two. Kelp-fish are caught with a very small hook of the same kind (Fig. 150), which are attached to a long twisted or plaited cedar line. The hook is tied to the line in the same manner as the halibut-hook, with a string which is wrapped around the lower end of an elastic stick, often made of whalebone. The thin hook-line is spliced to the lower end of this piece of whalebone by means of a wrapping of spruce-root. The upper end of the piece of whalebone is attached to the long cedar-bark line also by a wrapping of spruce-root. The hook here illustrated is one of a set of seventeen hooks, all attached to one line at distances of about 40 cm. Near its ends the cedar-bark line is turned back upon itself and closed with a frapping of spruce-root. The loops at the end serve for the attachment of sinkers and buoys, the line being thrown overboard and set so that the hooks are near the bottom of the sea. Sinkers are attached at both ends. At one end a piece of light wood is fastened to the end of the line about 50 cm. away from the sinker, to hold the line up from the bottom of the sea. To the other end a line and buoy are attached. The barb is baited with halibut or olachen. Sometimes ducks are also caught with this kind of a hook. It is claimed that this type of fishing-tackle was originally

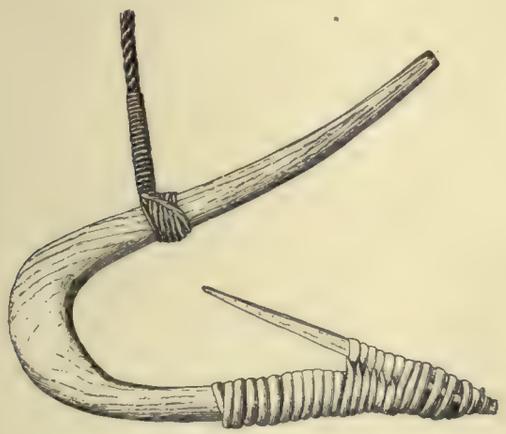


Fig. 149 ($\frac{1}{8}\frac{6}{5}\frac{6}{4}\frac{7}{7}$). Halibut-Hook. Length, 22 cm.

Fig. 150 ($\frac{1}{8}\frac{4}{4}\frac{4}{3}$). Part of Fish-Line, showing Hook. Length of shank and hook, 43 cm.

used by the Dena'x·da^{s}x^{u}. The floats of this line, as well as those of the halibut and codfish hooks, consist of seal-bladders (Fig. 151).

Fig. 151 ($\frac{1}{8}\frac{8}{10}$). Seal-Float. Length, about 50 cm.

The following description of fishing halibut and codfish illustrates the use of the hooks.

Halibut-Fishing.

When the fisherman gets ready to fish halibut, he takes the bark of spruce-root and devil's-club (*Fatsia horrida*), and he takes the box, the receptacle of halibut-hooks, and he takes out the halibut-hooks, which are referred to as "bent hooks," and whatever is in the box; and he takes the bark of the spruce-root and breaks it into small pieces. Then he puts it into the empty hook-box. As soon as the bottom of the box is covered, he takes his four hooks and puts them on the bark.

Then he also takes water and pours it over it, and he only stops pouring water over it when the water is as deep as the width of four fingers. After he has finished with the water, he takes four large stones and puts them on the fire of the house. As soon as they are really red-hot, he takes the tongs and he takes up the red-hot stones and puts them into the box into which

Lō'qwaxa p!ā'^{s}ē.

Wä, hë'^{s}maaxs la'ē xwā'nałelēda lō'q!wēnoxwaxa p!ā'^{s}ē. Wä, la ax^{s}ē'dxa xek!u'mas l!ō'p!ek·asa alē'wasē ɫe^{s}wa ē'oxmē. Wä, la ax^{s}ē'dxēs g·î'mlats!ē g·î'ldasa qa^{s}s ax^{s}wułts!ō'dēxēs g·ā'g·imōla, yîxa gwô^{s}yō' yek·â', ɫe^{s}wa waō'kwē g·ayî'mts!âq. Wä, la^{s}mē'sē ax-ē'dxa xek!u'masa l!ō'p!ek·asa alē'wasē qa^{s}s p!ō'p!exsālē qa am^{s}amayastō'wēs. Wä, la axts!ō'ts lā'xa la lō'pts!â g·î'mlats!ē g·î'ldasa. Wä, g·î'l^{s}mēsē ^{s}wī'^{s}la t!ä'x·^{s}īdē pā'q!exsda^{s}yasa g·î'ldasaxs la'ē ax^{s}ē'dxēs mō'sgem g·ā'g·imōla qa^{s}s axayî'ndēs lā'xa xek!u'mē.

Wä, lā'^{s}xaa ax^{s}ē'dxa ^{s}wā'pē qa^{s}s guq!eqē's lāq. Wä, ā'ł^{s}mēsē gwāł guqa'sa ^{s}wā'pē lā'qēxs la'ē mō'denēsa ^{s}wā'pē lā'xens q!wā'q!wax·ts!āna^{s}ēx, wä, g·î'l^{s}mēsē gwā'ɫtsa ^{s}wā'paxs la'ē ax^{s}ē'dxa mō'sgemē awâ'kwas t!ē'sema qa^{s}s xe^{s}x^{u}-le'ndēs lā'xa legwī'ɫasēs g·ō'kwē. Wä, g·î'l^{s}mēsē â'lak·!ālala x·î'x·îxsemālaxs la'ē ax^{s}ē'dxa k·!îplā'la qa^{s}s k·!îp!ē'dēs lā'xa x·î'x·îxsemāla t!ē'sema qa^{s}s lē

he has put his halibut-hooks; and he only stops when the four red-hot stones are in the water. Then he takes the cover of his hook-box, and puts it on, so that the steam may not come out.

As soon as the water ceases to be hot, on the following day, he takes off the cover and takes out the halibut-hooks, and he hangs them up so that they become dry. Then he washes his hands in the place where he has steamed his hooks.

As soon as this is done, he takes the box and pours water into his small fishing-canoe. As soon as he finishes doing so, he goes up from the beach and goes to the place where his halibut-hooks are hanging. He takes them down, and takes devil's-club, and, after measuring four finger-widths, he cuts around its bark. Then he warms it by the fire; and when it gets hot, he peels off the bark. He does so with four pieces. Then he takes twisted whale-sinew, and he takes his halibut-hooks, and he wraps the devil's-club around the place where the bait is to be (Fig. 152).

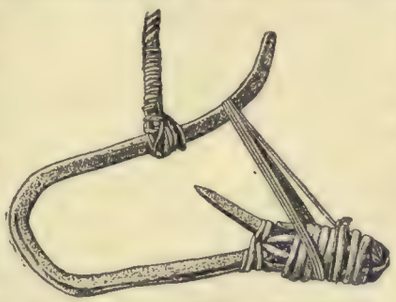


Fig. 152 ($\frac{1}{7}\frac{8}{7}$). Halibut-Hook with Devil's-Club Charm.

Then he ties it on with the twisted sinew. He does so to his four halibut-hooks. As soon as he finishes, he puts them into his hook-box, and puts the cover on, that the smell of the spruce and of the devil's-club may not go out.

After he has done so, he goes back

k·lîpts!ō'ts lā'xa g·î'ldasē yîx la g·îts!ewā'tsa g·ā'g·imōla. Wä, ā'ł^{s}mēsē gwā'łExs la'ē ^{s}wī'^{s}lastēda mō'sgEmē x·î'x·îxsEmāla t!ēt!ē'sEma. Wä, la ax^{s}ē'dEx yEku^{s}ya'^{s}yasa g·î'mlats!ē qa^{s}s yîkuyî'ndēs lāq qa k·!ē'sēs k·îx^{u}sâ'lēda k·!ā'łEla lāq.

Wä, g·î'l^{s}mēsē gwāł ts!E'lxstēda ^{s}wā'paxa la łE'nsa la'ē ax^{s}ō'dEx yîku^{s}ya'^{s}yas qa^{s}s ax^{s}wustE'ndēxēs g·ā'g·imōla qa^{s}s tēkumg·alîłēq qa lEmlEmx^{u}sEnx·^{s}î'dēs. Wä, la ts!E'nts!Enx^{s}wīd lā'xa q!ō'lasdasēxēs g·ā'gimōla.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē dā'laxa g·î'ldasē qa^{s}s lē qEp!Ełexsas lā'xēs lō'gwats!ēLē x̣wā'x̣waguma. Wä, g·î'l^{s}mēsē gwāł hë gwē'x·^{s}îdExs la'ē lâ'sdēs lā'xa L!Ema'isē qa^{s}s lē lā'xēs tEx·^{s}walî'lasaxēs g·ā'g·imōla. Wä, la axā'xōdEq qa^{s}s ax^{s}ē'dēxa ē^{s}x^{u}mē qa^{s}s mE'ns^{s}îdēsa mō'dEnē lā'xEns q!wā'q!wax·ts!āna^{s}ēxs la'ē k·!E'nt!ēdEx xEk!u'mas. Wä, la pEx·^{s}î'dEq lā'x̣a lEgwī'łē qa ts!E'lx̣^{s}wîdēsēxs la'ē saq!ō'dEx xEk!u'mas. Wä, laE'm mō'wē axō'yōs hë gwē'x·sē. Wä, la ax^{s}ē'dxa mē'dEkwē at!E'masa gwô^{s}yî'mē. Wä, la ax^{s}ē'dxēs g·ā'g·imōla. Wä, la q!Enē'p!ētsa ē^{s}x^{u}mē lāx axā'łaasLasa tē'łē.

Wä, la yEł^{s}î'tsa mē'dEkwē ā't!Em lāq. Wä, la ^{s}nā'x̣waEm hë gwē'x·^{s}îdxa mō'sgEmē g·ā'g·imōla. Wä, g·î'l^{s}mēsē gwā'łExs la'ē lā'ts!ōdEq lā'xēs g·î'm^{s}lats!ē g·î'ldasa. Wä, la yîku^{s}yî'ndEq qa k·!ē'sēs kEx^{u}sâ'lē gup!ā'lasasa alē'wasē Lē^{s}wa ē^{s}x^{u}mē lāq.

Wä, la gwā'łExs la'ē ā'Lē^{s}sta lā'xa

into the woods to take thin spruce-twigs — four of them. As soon as he has found four of these, he measures three spans of our fingers and four finger-widths. Then he cuts them off. At the thin end three stubs of branches stand out — and this is his reason that it is so, that the forward line of the halibut-hook may not come off (Fig. 153).[1] As soon as he puts on the forward line of the halibut-hook, he ties it on with a half-hitch, and it does not come off when the halibut bites. After this is done, he cuts on one side the butt-end, so that its side is flat, and he cuts a notch at the end, so that it has a knob.

ā′ʟ!ē qa^{s}s lē ax^{s}ē′dex wī′swuła alē′watsʟema lāx mō′ts!aqa. Wä, g·î′l^{s}mēsē q!ä′xa mō′ts!aqaxs la′ē ^{s}mɛ′ns^{s}īdɛq qa yū′duẋ^{u}p!ɛnqēs lā′xɛns q!wā′q!wax·ts!āna^{s}ēx, hë′^{s}mēsa mō′dɛnē awâ′sgɛmasasēxs la′ē k·!înk·întbɛndɛq. Wä, la q!wā′q!wanōsɛlēda wī′ɬba^{s}yasēxa yū′duẋ^{u}ts!aqē ts!ɛ′ɬts!ɛk!wa g·ā′yōł lāx ʟ!ɛnā′k·as. Wä, hë′ɛm lā′g·iłas hë gwä′łē qa k·!ē′sēs qɛnxâ′wēda hëg·î′wa^{s}yasa g·ā′mōla. Wä, g·î′l^{s}mēsē ax^{s}ā′ʟɛlōtsa hëg·î′wa^{s}yasēs g·ā′mōla lā′qēxs la′ē â′ɛm mā′x·^{s}waʟɛlōts lāq. Wä, la k·!ēs qɛmxâ′xs la′ē q!ɛx·^{s}ī′tsō^{s}sa p!ā′^{s}ē. Wä, g·î′l^{s}mēsē gwā′łɛxs la′ē k·!ax^{s}wī′dɛx apsō′t!ɛna^{s}yasa ʟ!ɛō′ẋ^{u}ba^{s}ē qa pɛxk·!ō′dɛnēs. Wä, la k·!îmt!ē′dɛx ō′ba^{s}yas qa mō′ẋ^{u}balēs.

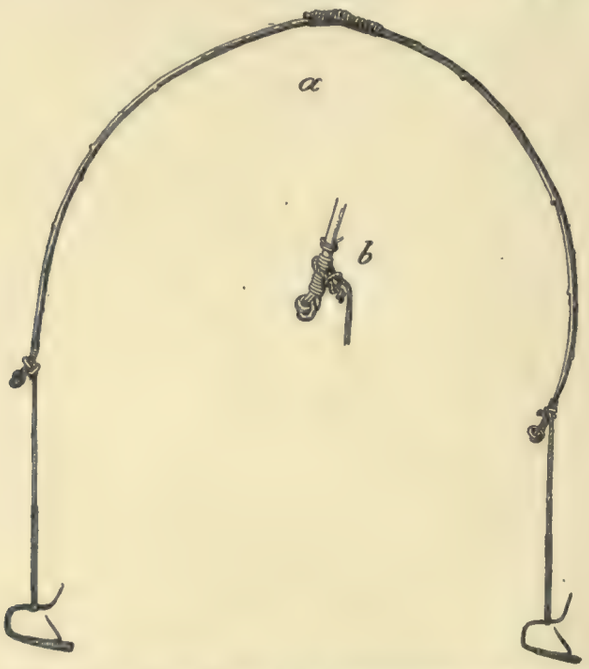


Fig. 153, *a* ($\frac{1}{11}$), Fishing-Tackle for Halibut-Fishing; *b*, Knotted End of Tackle. Height, 110 cm.

After he has done this, he digs at the butt-end of a spruce-tree, and takes

Wä, g·î′l^{s}mēsē gwā′łē axā′^{s}yas la′ē ^{s}lā′p!ēdɛx ō′xʟa^{s}yasa alē′wasā qa^{s}s ax-

[1] In the set here represented the ends of the twigs are knotted.

long thin roots. Then he splits them, and takes his knife, the sharp edge turned upward, and he puts the end of the split root under his heel. Then he puts the back of his knife on it, and he pulls the split root over it, and presses out its juice. He only stops doing this when it begins to be nearly white. Then it begins to be dry.

Then he takes the two spruce-twigs and puts their big ends together. Then he takes the split roots and ties the big ends together. After he has done so, he takes the split roots and twists them together in the same way as in making a rope. He puts (this rope) on the "stiff cross-piece," for that is the name of what he has made; and he ties it on tight on the middle of the stiff cross-piece; and this one on top is called "attachment of fishing-line," and the one below is called "attachment of sinker."

After he has finished this, he goes home and puts them into his small fishing-canoe. As soon as the tide goes out, he goes to get devil-fish for his bait. When he has obtained a large devil-fish, he goes home. As soon as he arrives outside of his house, he hangs up the devil-fish and takes off its skin. Then he cuts off its tentacles, and he also cuts off the body between. He cuts the tentacles into two pieces, and he hangs them up at the place where halibut is dried. Now this is done. Now the cedar-bark line which his wife has twisted for the fishing-line is done.

As soon as the tide comes in, in the morning, he goes to his canoe and ˢē′dēxa g·î′lsg·îlt!ē wī′swuł L!ō′p!Ex·s. Wä, la pā′x·sˢEndEq. Wä, la axˢē′dxēs k·!ā′wayowē qaˢs nEłx·ä′łamasēqēxs la′ē axˢā′LElōts ō′baˢyasa paā′kwē L!ō′p!Ek· laxēs ō′xɬax·sīdzaˢē. Wä, la k·ā′t!ēts awī′g·aˢyasēs k·!ā′wayowē lāq. Wä, la nē′xˢīdxa paā′kwē L!ō′p!Ek·!a qaˢs x·ik·â′lē wâ′pag·aˢyas. Wä, ā′łˢmēsē gwāł hë gwē′g·ilaqēxs ɬa′ē â′lak·!āla la mE′lx·ˢīda. Wä, laE′m lE′mxˢwīd.

Wä, la axˢē′dxa małts!a′qē alē′wasa qaˢs axˢō′dEx ɬuxᵘbaˢya. Wä, la axˢē′dxa paā′kwē L!ō′p!Ek·a qaˢs yā′Lōdē ɬēɬeoxᵘbaˢyas. Wä, g·î′lˢmēsē gwā′łē axā′ˢyasēxs la′ē axˢē′dxa paa′kwē L!ō′p!Ek·a qaˢs mE′lx·ˢīdē qa yō′wēs gwä′łōda dEnE′mēx. Wä, lā′xaa axˢā′LElōts lā′xa L!ā′k·!ōsē qaxs hë′ˢmaē ɬē′gEmłtsa axā′ˢyas. Wä, laE′m aˢla (?) yîłˢā′LElōts lā′x ˢnEqē′waˢyasa L!ā′k·!usē. Wä, hë′Em ɬē′gadēda ë′k·!aˢyas k·!ō′qwēwaˢē. Wä, lē′da bEna′ˢē ɬē′gadEs q!E′lyagaˢē.

Wä, g·î′lˢmēsē gwā′łExs g·ā′xaē nä′ˢnakwa qaˢs lē ax ˢä′łExsas lā′xēs lō′gwats!ēLē xwā′xwaguma. Wä, g·î′lˢmēsē x·ā′ts!ēˢstaxs lā′ē nē′sax tEq!wä′ qaˢs tē′ła. Wä, g·î′lˢmēsē nē′ts!ānEmaxa ˢwā′lasē tEq!wa′xs la′ē nä′ˢnakwa. Wä, g·î′lˢmēsē lā′g·aa lāx L!ā′sanâˢyasēs g·ō′kwaxs la′ē tē′xulsaxa tEq!wa′ qaˢs sap!ō′dēx L!ē′sas. Wä, la t!ō′sâlax dzē′dzElEmas. Wä, lā′xaa t!ō′sōdEx bEk·a′waˢya. Wä, la t!ō′sâlax g·ō′g·Egwaˢyâs qa maē′małts!aqałēs. Wä, la gē′xumk·!ints lā′xa gē′xᵘdEmäxa k·!ā′wasē. Wä, laEm gwałā′ła lā′xēq. Wä, laE′mɬa gwā′łē mElā′ˢyas gEnE′mas dE′nsEn lōgwaānEwē dEnE′ma.

Wä, g·î′lˢmēsē yūˢnā′kulaxa gaā′läxs la′ē alē′xˢwid qaˢs axā′łExsElēxēs t!E′l-

puts his club and his rope aboard, and also his hook-box. Then he starts and goes to the fishing-ground. As soon as he lands on the landward side, he stops on a rock, takes the devil-fish and hangs it around his neck. Then he takes his hook-box, opens it, and takes out his four halibut-hooks. He puts them down in the canoe, and he plucks off some seaweed that grows on the rocks and rubs it on his hands. Then he puts it into sea-water and rubs it. As soon as the bladders at the end (of the kelp) burst, he rubs them and washes his hands with them. After he has rubbed his hands for a long time, he puts them for a long time under water. Then he speaks, and says, praying, while he keeps his hands under water, "O old woman! look at my work on your behalf. Now this is clean with which I am going to catch my younger brother here." Thus he says; and then he says, "Yes, yes!"

And he rubs his hands and washes them; and after he has finished, he takes his knife and takes the two pieces of devil-fish off his neck. Then he measures it, spanning with his fingers, and he cuts off one span and two finger-widths. When he has cut off four pieces, he cuts them down on one side and spreads them out. After he has cut them, he bites off the slippery inside, which is just like the jelly-fish. After it is all off, he takes his round-knobbed halibut-club, and he spreads the devil-fish on the stern [end] of his fishing-canoe. Then he strikes it with his halibut-club, and he only stops striking it when it is flat and wide and it is also very thin. Now he finishes waganō ɫᴇˢwis dēdᴇnᴇ′mē; wä, hë′ˢmisēs g·î′mlats!ē. Wä, la sē′χˢwīd qaˢs lē lā′xēs lō′qwaˢē. Wä, g·î′lˢmēsē lā′g·aa lāx ā′ʟaˢyasēxs la′ē hᴇ′g·āāla qaˢs axˢē′dēxa tᴇq!wa′ qaˢs qᴇ′nxōdēs. Wä, la axˢē′dxēs g·î′mlats!ē qaˢs x·â′χˢwīdēq. Wä, la axˢwults!â′laxēs mō′sgᴇmē g·ā′g·îmōla. Wä, la axˢā′ɬᴇxsaq. Wä, la k!u′lx·ˢīd lā′xa ʟ!ᴇ′sʟ!ᴇkwaxs q!wā′xaē lā′xa awī′ˢnak!wa qaˢs ts!ᴇx·ˢī′dēs lā′xēs ēˢēyasō′. Wä, la axˢstᴇ′nts lā′xa dᴇ′msx·ē qaˢs gusˢī′dēs. Wä, g·î′lˢmēsē la ˢwī′ˢla kux·ˢī′dē pᴇ′npᴇnsbaˢyasēxs la′ē ts!ᴇxstᴇ′ndᴇq qaˢs gusˢī′dēxēs ēˢēyasō′wē. Wä, laˢmē′sē gē′g·iɬᴇxs gu′saxs la′ē axstᴇ′ndxēs ēˢēyasō′wē qaˢs gᴇyî′nsᴇlē habᴇ′nsalaq. Wä, la yā′q!eg·aˢɬa. Wä, la ˢnē′k·ᴇxs la′ē ts!ᴇ′lwaqaxs la′ē gᴇyî′nsᴇlas ēˢēyasō′wē, "Wä, ɬᴇ′k!wanä′, wë′g·a dō′qwałaxᴇn aē′k·ilaēnaˢē qaˢs laˢmō′ aē′k·!aakun dā′g·iɬtsilayōʟaxg·în ts!ā′ts!aˢyak·," ˢnē′k·îxs la′ē wâ′xa.

Wä, la gusō′dxēs ēˢēyasō′wē qaˢs ts!ᴇ′nts!ᴇnχˢwīdē. Wä, g·î′lˢmēsē gwā′ɬᴇxs la′ē axˢē′dxēs k·!ā′wayuwē qaˢs lā′wyōdēxēs qᴇ′nxwaˢē mā′ɬts!aq tᴇq!wa′. Wä, la bā′ɬˢītsēs q!wā′q!wax·ts!ānaˢē lāq qa ˢnᴇ′mp!ᴇnk·ēs hë′ˢmēsa mā′ɬdᴇnaxs la′ē tɬō′sōdᴇx. Wä, la mō′ts!aqē tɬō′saˢyasēxs la′ē tɬō′saxōdᴇx apsō′tɬᴇnaˢyas qaˢs ʟᴇpā′ɬāmasēq. Wä, la gwāɬ tɬō′saqēxs la′ē q!ᴇk·â′lax wiō′q!ug·as tsax·ᴇn hë gwēx·s gagēsā′mak·ē. Wä, g·î′lˢmēsē ˢwīlâ′masqēxs la′ē axˢē′dxēs hayanō′xa tɬᴇ′lwaganō qaˢs ʟᴇp!ᴇ′ndēsa tᴇq!wa′ lā′xēs ʟ!ᴇxᴇxsa′sēs lō′gwats!ē. Wä, la tɬᴇ′lχuldzōtsēs tɬᴇ′lwaganowē lāq. Wä, ā′ɬˢmēsē gwāɬ tɬᴇ′lχwaqēxs la′ē wa′dzōχˢwīda. Wä, lā′xaa la pᴇ′lbīdaˢwa. Wä, la ˢwī′la

doing this with the four measured pieces of halibut-bait.

As soon as he finishes, he takes the twisted string, three spans long, and ties it to the end of the devil's-club. This is called "tying of the bait." As soon as he has done so, he takes one flat piece of devil-fish and spreads it over the devil's-club. Then he wraps it around it, so that none of the devil's-club shows. The bone barb of the halibut-hook hardly shows over the devil-fish bait. Then he ties it all over with the bait-string. Now, the devil's-club is inside of the bait.

As soon as he finishes doing so with his four hooks, he takes the stiff cross-piece and puts on his sinker. Then he takes his fish-line and ties it with a half-hitch to the stiff cross-piece, and he takes his baited halibut-hooks and ties them with a half-hitch on each end of the stiff cross-stick.

As soon as he finishes doing so, he starts to go to the fishing-ground. As soon as he arrives there, he takes one stiff cross-stick and throws it into the water. As soon as it reaches the bottom, he takes a small bladder of seal and hauls his fish-line tight, so that it is straight down in the water. Then he ties it with two half-hitches to the mouth of the bladder. This one is named "sitting below." Then he measures four fathoms, and he takes another large bladder of a seal, and puts two half-hitches on, and ties it to its mouth, and he does the same as with the other one. (The name of the large bladder is "bladder on top.") Then he does the same with the other one.

As soon as the fishing-tackle is in hë gwē'x·ˢīdxa mō'wē ˢmEnē'kᵘ tē'łalas tłEqwa'.

Wä, g·î'lˢmēsē gwā'ła la'ē axˢē'dxa mEdEkwē' tslä'xEna yū'duxᵘpłEk· lā'xEn qłwā'qłwax·tslānaˢēx qaˢs yîłˢaLE'lōdēs ō'baˢyas lā'xa ō'baˢyasa ē'ˢxᵘmē. Wä, hë'Em ḷē'gadEs k·lî'lg·Emēsa tē'łē. Wä, g·î'lˢmēsē gwā'ła la'ē axˢē'dxa ˢnE'mxsa pEgEdzō' tEqłwa' qaˢs LEpłE'ndēs lāx ō'kuˢyayasa ē'ˢxᵘmē. Wä, la qłEnē'pEyîndEs lāq qa k·łeō'sēs nē'łałas. Wä, â'ˢmis la ha'lsElaEm la nēłEtâ'lē xā'xx·äˢyasa g·ā'mōla lā'xa tē'łē. Wä, la k·lî'lg·îłEntsa k·lî'lk·Emasa tē'łē lāq. Wä, laE'm ˢnā'qłEgâˢēda ē'ˢxᵘmäsa tē'łē.

Wä, g·î'lˢmēsē gwā'ł ˢwī'lēda mō'sgEmē g·ā'g·imōlaxs la'ē axˢē'dxēs Lłē-Lłā'k·łōsē qaˢs EaLE'lōdēxa qłE'lagaˢyas. Wä, la axˢē'dxē lōgwaanoˢē qaˢs mā'ẋuyōdēs lā'xa Lłēłlā'k·łosē. Wä, la axō'dxēs tētē'łbaa'kwē g·ā'g·imōla qaˢs mā'ẋˢwaLE'lōdēsa ˢnā'łˢnEmsgEmē lāx ō'baˢyasa Lłēłlā'k·łosē.

Wä, g·î'lˢmēsē gwā'łExs la'ē sē'ẋˢwīd qaˢs lē lā'xēs lō'qwaˢē. Wä, g·î'lˢmēsē lā'g·aaxs la'ē axˢē'dxa ˢnE'mtslaqē Lłā'k·łosa qaˢs axˢstE'ndēq. Wä, g·î'lˢmēsē lā'g·ilisaxs la'ē axˢē'dxa ama'ˢē pō'ẋuntsōx mē'gwatēx qaˢs łEkłudē'dē nē'xˢīdxēs lō'gwaanoˢē qa ˢnEgE'nsElēs. Wä, la qłutslEmk·łina'ē yiLa'sēxs, la yîłˢaLE'lōts lāx awā'xstaˢyasa pō'ẋunsē. Wä, hë'Em ḷē'gadEs kłwaabâ'ˢē. Wä, la bā'łˢīdxa mō'płEnk·ē lā'xens bā'Lax. Wä, la ē'tłēd axˢē'dxa ˢwā'lasē pō'ẋuntsa mē'gwatē qaˢs qłutslEmk·lî'ndēxatł yîłˢaLE'lōts lāx awā'xstaˢyas. Wä, la hë'Emxatł gwē'x·ˢīdxa ˢnE'me.

Wä, g·î'lˢmēsē ˢwī'la la g·iwä'lē lō'-

the water, he speaks, and says, "Top-bladder,[1] go on, old woman! Crawl up to it. Now it is well prepared. This is your sweet food. You, Wrinkled-in-your-Mouth! You, Squint-Eye! Go on, go on, go on, else I may be stiff when I leave this place, old woman!" Thus he says, and stops speaking.

As soon as the flood-tide stops running, the lower bladder goes down. Then he has a bite. At once the fisherman starts and takes the large bladder, — the "top-bladder," for that is its name, — and hauls it up. Then he takes hold of the lower one; and as soon as the two bladders are in his canoe, he pulls up the fish-line; and while he is pulling up the line, he says, "This is what I was wishing, old woman, — not to wait long on the water for you. Now hold this (my) younger brother. Don't let go this (my) younger brother." Thus he says while he is hauling it up.

As soon as he sees the halibut, he takes his club (Fig. 154) and puts it on his lap, and he again pulls. When the halibut hangs by the side of the canoe, he speaks again, and says again, "Now come, old woman! Now you have enough to eat, but now you have tasted your sweet food. Now I shall give you this sweet (food) as your second course." Thus he says, and clubs its nose.

As soon as the halibut is dead, he hauls it into the canoe, and he lays it on its back when it is in the canoe; and its head is turned toward the fisherman, for, when its head is turned away from the fisherman, he will not get gwayōsēxs la'ē yā'q!eg·a^{s}ła. Wä, la ^{s}nē'k·a; "Pō'ẋutEwē,[1] wë'g·iłła łEk!wanä' g·î'lg·iliL lā'qowa; la^{s}mō^{s} aē'k·!aakwa. Yū'Ems dzamē's p!ōxwä', yūL łEnbE-L!Exowä', yūL sElq!wētsä'. Wë'g·a, wë'g·a, wë'g·adzâ, ā'LEn LēguLē'lax łEk!wanä'," ^{s}nē'k·îxs la'ē q!wē'ł^{s}īda.

Wä, g·î'l^{s}mēsē q!ō'q!waqâwēda yixu'-läxs la'ē lE'ns^{s}īdēda k!waabâ'^{s}ē. Wä, laE'm q!Ex·^{s}ī'tsE^{s}wa. Wä, hë'x·^{s}ida-^{s}mēsa lō'q!wēnoxwē la sē'ẋ^{s}wīd qa^{s}s dā'x·^{s}īdxa ^{s}wā'lasē pō'ẋunsa, yî'xa pō'-ẋutâ^{s}ē, qaxs hë'^{s}maē ḷē'gEmsē. Wä, la dE'nx·^{s}īdEq. Wä, la'xaē dā'x·^{s}īdxa k!waabâ'^{s}ē. Wä, g·î'l^{s}mēsē ^{s}wî'la g·āx g·ē'xsa ma^{s}łtsE'mē pēpō'ẋunsExs la'ē dE'ng·ustâlaxēs lō'gwayowē. Wä, la ^{s}nē'g·îtEwē'xs la'ē dE'na, "Hë'^{s}mEn gwayō'ẋ^{u}dē łEk!wanä' qEn k·!ē'sē gē-wä'la ē'sElōL. Wä, dā'łaqō ts!ā'ts!a^{s}yä. Ġwā'k·asnō dawä'qō ṭs!ā'ts!a^{s}yä," ^{s}nē-g·îtâ'yîxs la'ē dE'naq.

Wä, g·î'l^{s}mēsē dō'x^{s}waLElaxa p!â'-^{s}yaxs la'ē dā'x·^{s}īdxēs tlE'lunganowē qa^{s}s g·ē'k·!îlg·îndēsēxs la'ē ē'tlēd dE'nx·-^{s}īda. Wä, g·î'l^{s}mēsē g·āx tEkwä'g·în-dēda p!â'^{s}ē lāx lō'gwats!asēxs la'ē ē'tlēd yā'q!eg·a^{s}ła. Wä, lā'xaa ^{s}nē'k·a, "Wä, gē'la łEk!wanē'; laE'ms pō'ł^{s}idLōL; laE'm-ḷas p!Ex^{s}aLE'laxōs dzā'mēsp!aqōs. Wä, la^{s}mē'sEn hë'lēg·îndEłtsg·ada ë'x·p!ak·," ^{s}nē'k·ēxs la'ē dE'lwax^{s}īdEx x·î'nts!asas.

Wä, g·î'l^{s}mēsē łE^{c}lē'da p!â'^{s}yaxs la'ē nē'x^{s}ałExsaq. Wä, laE'm nELā'laxs g·ā'xaē lāxs lā'xa lō'gwats!ē. Wä, lā'xaa gwastō'ła lā'xa lōq!wē'noxwē, qaxs g·î'l^{s}maaEl gwā'saxsdāła lāx lō'-gwānEmäq, lā'^{s}laē k·!ēs ē'tlēd q!Ex·-

[1] That is the name of the large bladder.

[1] Hë'Em ḷē'gEmsa ^{s}wa'lasē pō'ẋunsa.

another bite while fishing for halibut, and also if he should put it on its belly. They always do this way.

He only goes home when his canoe is full. As soon as the fisherman arrives on the beach of his house, he hauls the halibut out of his fishing-canoe; and when they are all out of it, he goes back to his fishing-canoe and takes off the bait from his hooks, and he hangs up what has been used as bait on the side of his canoe. As soon as all the bait is off, he unties the fore-line of his hooks from the cross-piece and puts them into the hook-box, and he also unties the sinker and hangs it up on the drying-place for halibut, and he also unties the fish-line and coils it up well, and he unties the bladders and puts them into the canoe. Then he hangs up the fish-

ᵍī′tsEˢwa lō′qwaxa p!å′ᵍē ʟōxs hEqwa′laē. Wä, la hë′x·saEm gwē′g·ilē.

Wä, ā′łˢmēsē la nä′ˢnakuxs la′ē qō′t!ē yā′ˢyats!as. Wä, g·ī′lˢmēsē lā′g·alis lāx ʟ!Emā′isasēs g·ō′kwē. Wä, hë′x·ˢidaˢmēsa lō′q!wēnoxwē gax·sōłtâlaxa p!å′ˢē lā′xēs lō′gwats!ē. Wä, g·ī′lˢmēsē ˢwī′lōłtâxs la′ē ẋwē′laqa lāxs lā′xēs lō′gwats!ē qaˢs tēłō′lēx tē′łasēs g·ā′g·imōla. Wä, la geẋwä′gEdālasa tētā′łmōtē lāxa lō′gwats!ē. Wä, g·ī′lˢmēsē ˢwilå′wa tē′tēłaxs la′ē mā′x·ōdEx hë′g·iwaˢyasēs g·ā′g·imōla lā′xa ʟ!ā′k·!osē qaˢs g·its!ō′dēs lā′xa g·ī′mlats!ē. Wä, lā′xaa mā′x·ōdxa q!E′lyayayuwē qaˢs lē tē′x·ˢwalīsaq lā′xa lE′mẋudEmäxa k·!ā′wasē. Wä, lā′xaa mā′x·ōdxa lō′gwaanâˢē qaˢs aë′k·!ē qEsē′dEq. Wä, lā′xaa mā′x·ōdxa pēpō′ẋunsē qaˢs axˢā′łExsEq. Wä, la tEẋwā′lēsxa lō′gwaanâˢē ʟEˢwa

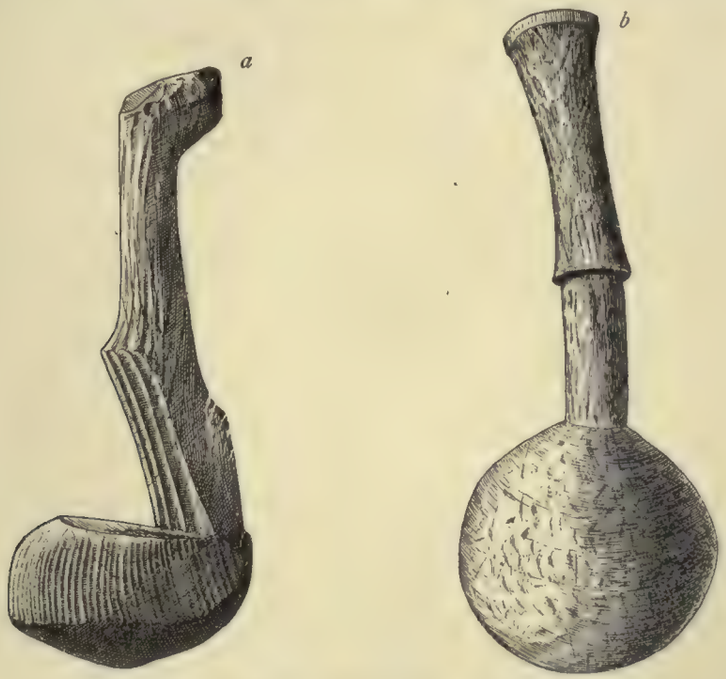


Fig. 154, *a* ($\frac{1}{3}\frac{6}{5}\frac{6}{6}$), *b* ($\frac{1}{2}\frac{6}{1}\frac{6}{4}$). Halibut-Clubs. Length, 28 cm., 30 cm.

line and the four bladders on the beach, also on the drying-place for halibut. At last he goes up from the beach and enters his house. As soon as he enters his house, his wife quickly gives him something to eat. I have forgotten that when the fish-lines of the fisherman are all in the water, he takes his travelling-provisions and quickly eats, that the halibut may also quickly bite. Then the halibut is also greedy for the bait. Therefore he does so. That is all about this.

mō'sgEmē pēpō'ẋuns lā'xaaxa lE'mẋ^{u}-dEmäxa k·!ā'wasē. Wä, lawisḷa lâ'sdēs lā'xa L!Emā'isē qa^{s}s lē laē'L, lā'xēs g·ō'kwē. Wä, g·î'l^{s}mēsē laēL, lā'xēs g·ō'kwaxs la'ë gEnE'mas hā'labala L!Eẋwē'laq. Wä, hë'xōḷEn L!Elē'wēsE^{s}wa, yîx g·î'l^{s}maē ^{s}wī'la la g·iwä'lē lō'gwayâsa lō'q!wēnoxwē la hê'x·^{s}idaEm ax-^{s}ē'dxēs g·iwE'lkwē qa^{s}s hā'labalē hamx·-^{s}ī'dEq qa ō'gwaqēs hā'labalēda p!â'^{s}ē q!Ex·^{s}ī'dEx tē'łas. Wä, ō'gwaqa mESElē'da p!â'^{s}yax tē'łas. Wä, hë'Em lā'g·iłas hë gwē'x·^{s}īdē. Wä, laEm gwāł lā'xēq.

While the tribes around Cape Scott and Newettee attach the sinker firmly to the tackle, the Kwakiutl attach it loosely to cedar-bark, so that it is shaken off by the halibut when it bites.

Red Cod.

Now we will talk about "the-one-who-pulls," the red cod.[1] . . .

As soon as (the man) finishes, he goes into the woods to search for thin cedar-branches; as soon as he finds them, he pulls off as many as he needs, and he also takes some spruce-roots. As soon as he gets them, he goes home to his house; and after he has entered his house, he strips off the leaves of the twigs, and he puts the thin end over the fire to warm it. When it gets warm, he twists a short piece. After he has done so, he puts a knot at one end. As soon as he has done so to all the twigs, he measures the right length, two spans and four finger-widths long, and cuts them

Wä, la^{s}mē'sEns ē'dzaqwa^{s}łtsa nē'-ts!a^{s}ē, yî'xa L!â'xsEmē. . . .

Wä, g·î'l^{s}mēsē gwā'łExs la'ē qā's^{s}īd qa^{s}s lē lā'xa ā'L!ē ā'läx tExō'masa dEnā'smisē. Wä, g·î'l^{s}mēsē q!ā'qēxs la'ē nExō'dalaxēs gwô^{s}yō'qa wā'xaatsēs ax^{s}ē'xstsE^{s}wē. Wä, lā'xaa ā'axbālaxa L!ō'p!Ek·asa alē'wasē. Wä, g·î'l^{s}mēsē lâ'łqēxs la'ē nä'^{s}nak^{u} lā'xēs g·ō'kwē. Wä, g·î'l^{s}mēsē laē'L, lā'xēs g·ō'kwaxs la'ē ë'gul^{s}E'ndEx k·!ā'mōmâsa tExo'mē. Wä, la lā'xLendEx wī'łba^{s}yas lā'xa lEgwī'łē qa ts!Ex^{s}wī'dēs. Wä, g·î'l^{s}mēsē ts!E'lx^{s}wīdExs la'ē sE'lp!ēdxa ts!Eẋ^{u}stō'-bida^{s}wē. Wä, g·î'l^{s}mēsē gwā'łExs la'ē mō'ẋ^{u}bEmdEq qa mō'ẋ^{u}balisēxa mō'-kwa^{s}ē. Wä, g·î'l^{s}mēsē ^{s}nā'ẋwa hë gwē'x·^{s}īdxa t!Exu'maxs la'ē ^{s}mE'ns^{s}īdEq qa awâ'sgEmats la ma^{s}łp!E'nk·ē lā'xEns q!wā'q!wax·ts!āna^{s}ē; hë'^{s}misa mō'dEnē awâ'sgEmasasēxs la'ē k·!ī'mtōdEq. Wä,

[1] Here the description of the bending of the hooks, given on p. 332, has been omitted.

off. He makes a notch in the end, and there is a knob at the big end. Then he puts a notch by its side.

As soon as he has finished doing so, he splits the roots and scrapes them; and when all the juice is out of them, he takes his cross-piece and puts the flat sides together and ties them together with the roots. After this is done, he splits cedar-bark into strips one finger wide, making four pieces. He ties their ends together in the middle of the cross-piece. He is going to put the sinker at the end of the four, for it is always deep where the codfish stays.

After he has finished this, he goes to get devil-fish for his bait, After he has caught a devil-fish, he takes off its skin, and he does the same with the devil-fish as he did when it was to be bait for fishing halibut. Only this is different, that he puts the devil-fish bait on the bone barb of the codfish-hook.

After this is done, he watches until the tide nearly stops falling. Then he starts. He puts many medium-sized stones into his small fishing-canoe; and when he has many stones, he paddles away. He goes to the place that he has noted, where there are many cod-fish. As soon as he arrives there, he ties the codfish-hooks to his cross-piece, and he takes four stones and ties them to the ends of the four strips of cedar-bark. Then he ties his fish-line to the cross-piece and throws it into the water; and when it gets to the bottom, he gets a bite; and as soon as he gets a bite, the four sinkers come off. Then la k·ît'mtlēdEx ō'ba^{s}yas qa mEẋ^{u}bā'lisa ḷEẋ^{u}ba'^{s}ē. Wä, la k·!ā'x^{s}wīdxa apsō'-t!Ena^{s}yas.

Wä, g·î'l^{s}mēsē hë gwē'x·^{s}īdqēxs la'ē pā'x·^{s}īdxa Lōp!Ek·ē qa^{s}s ¡k·ē'x^{s}ēdēq. Wä, g·î'l^{s}mēsē ^{s}wī'lâwē ^{s}wâ'paga^{s}yasēxs la'ē dā'x·^{s}īdxēs L!ā'k·!ōsLē qa^{s}s axō'dē pē'pExk·!ōdEna^{s}yas. Wä, la yîLō'tsa L!ō'p!Ek·ē lāq. Wä, g·î'l^{s}mēsē gwā'łExs la'ē dzEx^{s}ī'dxa dEna'sē ^{s}nā'ł^{s}nEmdEn-dzâ'yaakwē lā'xEns q!wā'q!wax·ts!ana-^{s}ēx. Wä, la mō'xsē axā'^{s}ya. Wä, la ^{s}nā^{s}nE'mgax ō'ba^{s}yas qa^{s}s lē yîł^{s}ā'LElōts lāx nEg·ā'ga^{s}yasa L!ā'k·!ōsē. Wä, hë'Em axbā'lałxa mō'sgEmē q!ē'yaga^{s}ya, qaxs hë'mEnała^{s}maē wu'nqElē ayā'sasa nē'-ts!a^{s}ē.

Wä, g·î'l^{s}mēsē gwā'ła la'ē nē'sax tEq!wä' qa^{s}s tē'ła. Wä, g·î'l^{s}mēsē lâ'łxa tEq!wä'xs la'ē hë'x'^{s}īdaEm sapō'dEx L!ē'sEna^{s}yas. Wä, la hë'Em gwē'g·ilaxa tEq!wä'x gwē'g·ilasasa tē'łLasa łō'qwäxa p!â'^{s}ē. Wä, lē'x·a^{s}mēs ō'gu^{s}qałā'yosēxs â'^{s}maē hē'łEma^{s}ēda tEq!wa' tēł lā'xa xaxx·ä'^{s}yasa nā'nētslaayō g·ā'mōla.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē dō'qwała qa Elā'qēs walEmwä'xsdElis x·ā'ts!ax· lāxs la'ē alē'ẋ^{s}wīda. Wä, laE'm xEqEō'-sElasa ha^{s}yā'ł^{s}a t!ē'sEm lā'xēs bā'kula-ts!ē ẋwā'ẋwaguma. Wä, g·î'l^{s}mēsē qlē'nEma t!ē'sEmxs la'ē sē'ẋ^{s}wīda. Wä, laE'm lāł lā'xa q!a'walasō^{s}mē q!ā'yasasa nē'ts!a^{s}ē. Wä, g·î'l^{s}mēsē lā'g·aa lā'-qēxs la'ē mō'ẋ^{u}^{s}aLE'lōtsa nā'nēts!aa'-yowē g·ā'g·imōla lā'xa L!ā'k·!osē. Wä, la ax^{s}ē'dxa mō'sgEmē t!ē'sEma qa^{s}s mō'ẋ^{u}bEndālēs lā'xa mō'ts!aqē dEna's. Wä, la mā'ẋuyōtsēs bā'kulaanâ'^{s}ē lā'xa L!ā'k·!osē. Wä, la ax^{s}stE'ndEq. Wä, g·î'l^{s}mēsē lā'g·îlīsExs la'ē q!Ex·^{s}ī'tsE^{s}wa. Wä, g·î'l^{s}mēsē q!Ex·^{s}ī'tsōxs la'ē ^{s}wī'la

it is not heavy when he pulls it up; and after he has taken off what he has caught, he ties on four other stones to the ends of the four narrow strips of cedar-bark; and when this is done, he throws it again into the water. He continues to put on again and again four sinkers [stones] whenever he has had a bite; but he does not touch the bait, for it is tied on tight, and it does not get spoiled every time he gets a bite. When the small fishing-canoe is full, the fisherman returns home. When he arrives on the beach in front of his house, he unties his codfish-hooks and his fish-line, and he coils it up well. Then he gets out of his canoe and hangs them up at the place where the drying halibut is hung up. Then he carries up his codfish-hooks and hangs them up in the corner of the house.

lawä′yēda mō′sgEmē q!ē′q!Elyaga^{s}ya. Wä, la k·!ēs·la gu′nt!axs la′ē dE′nx·^{s}īdEq. Wä, g·î′l^{s}mēsē lā′wiyōdxēs yā′nEmaxs la′ē ẋwē′laqa mō′ẋ^{u}bEntsa mō′sgEmaxat! tl!ē′sEm lā′xaax ō′ba^{s}yasa mō′xsa ts!ē′łts!Eq!a dEna′sa. Wä, la gwā′łExs la′ē ẋwē′laqa ax^{s}stE′ndEq. Wä, â′Em ẋwā′ẋwēlaqEla ax^{s}ā′lElōdxa mō′sgEmē q!ēq!E′lyagē tl!ētl!ē′sEmxs lā′naẋwa q!Ex·^{s}ī′tsE^{s}wa. Wä, lā′ḷa k·!ēs ḷâ′balaxa tē′łē, qaxs a′Eḷaa′kwaā yîlElā′lEla k·!ē′sēłaxs ō′dzEx·^{s}īdExs lā′naẋwaē q!Ex·^{s}ī′tsE^{s}wa. Wä, g·î′l^{s}mēsē qō′tl!ēda bā′kulats!ē ẋwā′ẋwagumxs la′ē nä′^{s}nakwa bā′ku^{s}lēnoxwē. Wä, g·î′l-^{s}mēsē lā′g·alīs lā′xa L!Emā′isasēs g·ō′kwē la′ē max·â′la ^{s}wī′laxēs nā′nēts!aayuwē g·ā′g·imōla ḷE^{s}wēs bā′kulaā′nâ^{s}ē dEnE′ma. Wä, la aë′k·a qEs^{s}ē′dEq. Wä, la lō′łtâ lā′xēs yā′^{s}yats!ē qa^{s}s lē tē′ẋ^{s}walīsaq lā′xa g·ē′ẋ^{u}dEmäxa k!ā′wasē. Wä, lā′ḷa dā′laEmxēs nā′nēts!aā′yuwē g·ā′g·imōla qa^{s}s lē tē′ẋ^{s}wā′līłas lāx ō′nēgwīłasēs g·ō′kwē.

Following is a description of the preparation of the fish-line and of the method of fishing *Pleurogrammus*. After a description of the capture of devil-fish for bait, the description continues: —

And so (the man) comes home. As soon as he reaches the beach of his house, he carries the devil-fish that he has obtained by pulling it out (from under the stones) and hangs it over a post standing on the beach, so that the skin of its body gets dry.

As soon as the skin is dry, he takes a straight-edged knife and strips off the skin of the devil-fish. When the skin is all off, he cuts off from the body the tentacles, each in two pieces, and hangs them up also on the staging for drying halibut, As soon as all the

Wä, g·ā′x^{s}mēsē â′Em nä′^{s}nak^{u} lā′xēs g·ō′kwē. Wä, g·î′l^{s}mēsē lā′g·alīs lā′x L!Emā′isasēs g·ō′kwaxs la′ē gasx·ō′łtōdxēs nanē′samEndzā′nEmē tEq!wa′ qa^{s}s tEẋwā′līsēq lā′xa ẋwē′dēsē dzō′ẋum qa lEmẋ^{s}wī′dēs ō′kwiya^{s}yas L!ē′sas.

Wä, g·î′l^{s}mēsē lEmlE′mẋuyax·^{s}īdē L!ē′sasēxs la′ē ax^{s}ē′dxēs ^{s}nExx·ä′ła k·!ā′wayâ qa^{s}s sap!ē′dēx L!ē′sasa tEq!wa′. Wä, g·î′l^{s}mēsē wī′lâwēda L!ē′saxs la′ē tl!ō′sâlaxa maē′ma^{s}łts!aqē lāx g·ō′g·îgwEyâs g·ä′g·ilEla lāx bā′k·awa-^{s}yas qa^{s}s lä′^{s}xat! tEẋ^{s}walī′sElaq lā′xa

tentacles are off, he takes the body and the head and hangs them up in his house. The legs of the devil-fish, however, are all white.

As soon as they are dry, he measures three finger-lengths, and cuts them all in pieces of the same length. As soon as they have all been cut up, he cuts them also lengthwise in two pieces. When they have all been cut up, he takes his short wedge and also the stern-seat of his little canoe. He puts it down flat on the floor of his house. Then he takes the devil-fish and lays it down on the stern-seat of his little canoe. He takes his short wedge and pounds it. His left hand holds the piece of devil-fish, and with his right hand he holds the flat point of the wedge; and he pounds the devil-fish with the other end of the short wedge.

He only stops pounding it when it is thin. He does so with all the (pieces of) devil-fish. As soon as it is all done, he takes the small bait-basket and puts into it the pounded devil-fish bait that he has made.

Then he takes his fishing-line and stretches it out in front of his house. The fishing-line is not close to the ground, for the height of the fishing-line above the ground is five spans. It is stretched out so that it is taut.

Then he takes the little bait-basket and places it under one end of the fishing-line. And he takes one piece of pounded devil-fish and wraps it

x·îłdEmī′ɬaxa k·!ā′wasa. Wä, g·î′l^{s}mēsē wîlâ′masxa g·ō′g·igwEyâxs la′ē ax^{s}ē′dxa bā′k·awa^{s}ē ḷE^{s}wa ga^{s}wa qa^{s}s lē tēx·-walī′ɬas lā′xēs g·ō′kwē. Wä, laE′mḷa mElmE′lk·!Enēda g·ō′g·îgwEyâsa tEq!wa′.

Wä, g·î′l^{s}mēsē lEmlE′mxunx·^{s}īdExs la′ē mE′ns^{s}īdEq qa yāɬyū′duẋ^{u}bEnk·ēs lā′xEns q!wā′q!wax·ts!āna^{s}yaxs la′ē t!ō′-t!Ets!ālaq ^{s}wī′^{s}la hë awâ′sgEmē. Wä, g·î′l^{s}mēsē ^{s}wī′^{s}wElx·sExs la′ē ē′t!ēd t!ō′-t!Ets!ālaq lāx g·î′ldōlāsas qa^{s}s maē′ma^{s}ɬ-ts!alēq. Wä, g·î′l^{s}Em^{s}xaā′wisē ^{s}wī^{s}wElx·-sExs la′ē ax^{s}ē′dxēs ts!Ek!wa′ lE′mg·ayâ; wä, hë′^{s}mis gExq!ExḷA′^{s}yasēs ẋwā′ẋwa-gumē. Wä, lē paxā′lîłaq lā′xēs g·ō′kwē. Wä, lē ax^{s}ē′dxa tEq!wa′ qa^{s}s axdzō′dēs lā′xa gExq!ExḷA′^{s}yasēs ẋwā′ẋwagumē. Wä, lē ax^{s}ē′dxa ts!Exstō′ lE′mg·ayâ′ qa^{s}s t!Elẋ^{s}wī′dēs lāq. Wä, laE′m dā′ɬē gE′mxōɬts!anäsēxa tE′mk·!â^{s}ē tEq!wa′; wä, lē dā′ɬasēs hëɬk·!ōɬts!ā′na^{s}ē lāx pExba′^{s}yasa lE′mg·ayuwē. Wä, hë′^{s}mis la t!ē′ɬẋulasē apsba′^{s}yasa ts!Eẋ^{u}stowē′ lE′mg·ayō lā′xa tEq!wa′.

Wä, ā′ɬ^{s}mēsē gwāɬ t!E′lẋwaqēxs la′ē pE′lspadzâ. Wä, ^{s}nā′ẋwa^{s}mēsē hë gwē′x·^{s}īdxa tEq!wa′. Wä, g·î′l^{s}mēsē ^{s}wī′^{s}laxs la′ē ax^{s}ē′dxa tē′lats!ē L!ā′L!a-xEma qa^{s}s axts!ō′dēsa tē′ɬēla^{s}yas t!Elō′k^{u} tEq!wa′ lāq.

Wä, lē ax^{s}ē′dxēs pEna′yowē qa^{s}s lē dō′ẋ^{s}wulsaq lāx L!ā′sanâ^{s}yasēs g·ō′kwē. Wä, lē k·!ēs q!Ets!E′s lā′xa a^{s}wī′nak!u-sēda pEnā′yuwē qaxs sEk·!a′p!Enk·aē lā′xEns q!wā′q!wax·ts!āna^{s}ēx, yîx wal-g·ō′stE^{s}wasasa pEnā′yuwē lā′xa a^{s}wī′na-k!usē. Wä, lē łEk!utalaEmxs la′ē dō′-k!usa qa ts!ā′sēs.

Wä, lē ax^{s}ē′dxa tē′lats!ē L!ā′L!axEma qa^{s}s lē ha^{s}nabō′lsas lāx apsba′^{s}yasa pEnā′yuwē. Wä, la^{s}mēs ax^{s}ē′dxa ^{s}nE′m-xsa lā′xa t!Elō′kwē tEq!wa′ qa^{s}s q!E-

around the hook attached to the fishing-line. And he takes the bait-string and ties the bait to the bait-holder. As soon as this has been done, he does the same also with the next one, and he does so with all the others. He only stops when all the bait is ón the (whole) number of hooks.

As soon as they have all been baited, he unties one end of the fishing-line and coils it up. When it has all been coiled up, he puts it in his little fishing-canoe. Then he takes his bladder for a top-float of one end of the fishing-line, and also a stone for an anchor for the other end.

Then he paddles and goes to a place where there are many kelp-fish (*Pleurogrammus*) at a place where the tide runs strong. Then he throws into the water the anchor at one end of his fishing-line. As soon as it reaches the bottom, he lets [run] out the fishing-line while he is drifting along with the tide. Then the fishing-line is stretched along the bottom, down below.

As soon as it is all in the water, he lets [run] out another long rope, that is tied to the end of the fishing-line, so that it is all stretched along the bottom. That is the place to which the bladder is tied.[1] As soon as it is done, he leaves it. However, the fishing-line does not remain on the water a long time, before he hauls it up and takes off all the kelp-fish from the [points of the] (hooks). Sometimes there is a kelp-fish on each of the (whole) number of hooks. As soon as they are all off from the hooks, he coils up

nē′px·älabEndēs lā′xa yîk·ōk!unā′ˢyasa pEnā′yuwē. Wä, lē axˢē′dxa k·!î′lk·Emäsa tē′łē qaˢs k·!îlgEłEnaˢēxa tē′łē lā′xa tē′łEmaāsē. Wä, g·î′lˢmēsē gwā′łExs la′ē ē′t!ēdxa apsä′lEläs. Wä, hë′Emˢxaagwäˢlē. Wä, lē ˢnā′ẋwaEm hë gwē′x·ˢīdxa waō′kwē. Wä, ā′łˢmēsē gwā′łExs la′ē ˢwī′ˢla tē′łˢēdEx wā′xaasasa yīyEk·ō′.

Wä, g·î′lˢmēsē ˢwī′ˢla la ţē′lkuxs la′ē qwē′łElsax apsba′ˢyasa pEna′yuwē qaˢs qEsˢē′dēq. Wä, g·î′lˢmēsē ˢwī′ˢla la qEdzEkwa′xs la′ē axˢā′łExsaq lā′xēs pā′-panayōẋᵘsēlats!ēlē ẋwā′ẋwaguma. Wä, lē axˢē′dxēs pō′ẋunsē qa pō′ẋutEwēsa apsba′ˢyasa pEna′yuwē; wä, hë′ˢmēsa t!ē′sEmē qa q!E′ldzEmsa apsba′ˢyas.

Wä, lē sē′ẋˢwīd qaˢs lē lāx q!ā′yasasa pEx·î′tē lā′xa łā′k!wēmatsasasa ts!ā′la. Wä, hë′ˢmis la q!E′ltsEndaatsēxa q!E′lsbaˢyasēs pEna′yuwē. Wä, g·î′lˢmēsē lā′g·alīsExs la′ē ts!E′ngwēg·ēxa pEna′yâxs la′ē yō′lēg·ēxa ts!ā′la. Wä, laE′m l!ā′xˢalīsElēda pEna′yuwē lā′xa banē′.

Wä, g·î′lˢmēsē ˢwī′ˢlaˢstaxs la′ē ts!E′nẋᵘˢstālasa ō′guˢlaˢmē g·î′lt!a dEnE′m la mō′ẋᵘbanōsēxa pEna′yuwē qa ˢwī′ˢlēs l!ā′xalīsa. Wä, hë′ˢmis la mō′ẋᵘbEndaatsēsa pō′ẋunsē. Wä, g·î′lˢmēsē gwā′łExs la′ē bâs. Wä, k·!ē′st!a â′laEm g·îwä′lēda pEna′yâxs la′ē dE′nx·ˢīdEq qaˢs k!uldzEłE′ndēx mä′baˢyas pEx·î′ta. ˢnā′łˢnEmp!Enaˢē gwā′łxabaēda pEx·î′tē lāx wā′xaasasa yīyEk·owē′. Wä, g·î′lˢmēsē ˢwī′ˢla k!u′lsˢīdEx mä′baˢyasa pEna′yuwē la′ē qEsˢā′łExsaxa pEnā′yuwē

[1] That is the end of the rope tied to the fishing-line.

his fishing-line in his little fishing-canoe. As soon as everything is aboard, he returns home.

lā′xēs pā′panayuẋᵘsīˢlatsl!ē ẋwā′ẋwaguma. Wä, g·î′lˢmēsē ˢwī′lg·aałExsExs la′ē nä′ˢnakwa.

Hooks for trolling consist of a straight bone, sharp at each end, about 10 cm. long, or of a small barbed hook (Fig. 155). The fish-line, which is made of hair, is tied to the middle of the straight bone hook; and bait, generally herring, is tied around it, or is first attached to a stick and then tied to the trolling-hook. The trolling-line is made of kelp or nettle from sixteen to eighteen metres long. An elongated stone, which serves as a sinker, is attached to the line halfway between the hook and the canoe. Generally it is tied to the line with cedar-withes or spruce-root. In fishing, the line is wound around the hand, and the fisherman paddles at the same time. The trolling-hook is generally used for catching salmon. After the hook has been baited, the fisherman says to it, "Now go at it, go ahead, it has been put on well!" (WälōLä′i, mīoxwanä′i; wä′ig·ił laqawä′i, laˢmōˢ aë′k·aā′kwa.) Then the hook is thrown into the water, and the fisherman continues to paddle. As soon as he has a bite, he says, "Hold fast, hold fast, salmon!" (Dā′ła, dā′ła, mīoxwanä′i!) and the line is hauled in slowly. While hauling in the fish, he says "Pfff!" in the same way as dogs are called. When the salmon comes in sight, it is struck with a short pole to the end of which a harpoon-point is attached (tsē′xaupl!ēq). Then it is hauled in and struck on the head with a club (tlE′lwaganō or tlE′lwagayu). The salmon are placed in the canoe with head turned towards the bow.

Fig. 155 ($\frac{1}{2}$). Trolling-Hook. Length, 10 cm.

As soon as the fisherman gets home, he washes his fish-line and coils it up neatly, and lays it outside to dry in the sun.

The preparation of the tackle and the method of trolling have also been described as follows: —

Now I will talk again about fishing for kelp-fish with lines. (In former times,) when a [first] man wanted to go out fishing with lines, he first asked his wife for nettle-bark. Then he requested one of the old women to spin it (and to make) a fishing-line. The old woman takes her spindle at once, and does the same as she did when working the nettle for making

Wä, laˢmē′sEn ē′dzaqwał gwā′gwēx·sˢalał lā′xa Ll!ā′qäxa pEx·ī′da. Wä, hë′ˢmaaxs Ll!ā′q!ēxsdaēda g·ā′lē bEgwā′nEma; wä, hë′ˢmēs g·îl axᶜē′daatsē guna′sēs gEnE′mē. Wä, lē g·ā′g·ōnas lā′xa g·ā′yaxa lā′xa łEE′lk!wānaˢyaˢē qa mēt!ē′sēq qa Ll!ā′gaā′nowēs Ll!ā′gayâs. Wä, hë′x·ˢīdaˢmēsa łEk!wā′naˢē axᶜē′dxēs x·î′lp!Exsdowē. Wä, lē hë′Em gwē′g·īlaqē gwē′g·ilasasa ē′axEläxa gu′nē

an olachen-net (see pp. 370, 399). And it is the same thickness as the size of the twine for tying the mouth of the olachen-net. Sometimes the length of the fishing-line is twenty fathoms. As soon as it is done, the old woman returns it to the owner.

The man, however, takes the leg-bone of a deer; but the thigh-bone of the bear is best, for it is stiff (does not bend). He breaks it into thin pieces. As soon as he has broken it, he picks out a thin piece and takes it to a place where there is grit-stone. He grinds it so that it becomes round, and so that it is sharp on both ends. Its length is three spans. That is the same as the long bone that was dug up by Mr. Smith on the end-beach of Tsā'xis.[1] This was also used for trolling for silver-salmon, before there were any white people with their hooks.

As soon as this is done, he asks his wife to pluck out some of her hair. That, however, is the way the hair of the former women was; it was long, and the women of the former people did not plait their hair; it just hung down loose. As soon as she sits down, she coils up the hair on the floor. (I only wish to mention this a little, for none of the new women have long hair.) As soon as the hair plucked out by the woman from the right side of her head is enough, she plaits it into a three-stranded line. When she has plaited it, she gives it to her husband. It is to be tied [next] to the fishing-line; that is, it is tied to the throat-

qaē'da ta'qīläxa tā'gałē. Wä, lē hë'ɛm wā'g·itē awâ'gwīdasas yîg·ɛxsta'ˢyas awā'xstaˢyasa tā'gałē. Wä, lē ˢnā'ł-ˢnɛmp!ɛna maˢłtsɛmg·ustâ'p!ɛnk· lā'xɛns bā'ʟaqē wā'sgɛmasasa ʟ!ā'gaanâˢē. Wä, g·î'lˢmēsē gwā'łɛxs la'ē ts!ɛwē'da łɛk!wā'naˢyas lāx axnō'gwadäs.

Wä, lā'ɫēda bɛgwā'nɛmē axˢē'dɛx xā'qas g·ō'g·ɛgwɛyâsa gē'wasē. Wä, hë'ɫał ë'k·agawa xā'xɛgɛnōlg·aˢyasa ʟ!a'ˢē, yîxs ʟ!ā'xaē. Wä, lē tɛp!ē'dɛq qa wīsˢwułtōwēs. Wä, g·î'lˢmēsē gwāł tɛpa'qēxs la'ē mɛ'nmaqaxa wī'sˢwułtowē qaˢs lē dā'laq lā'laa lā'xa dɛnā'xɛk!wäs t!ē'sɛmē. Wä, lē g·ē'xɛlālaq qa lē'ɛl-x·ɛnx·ˢīdēs; hë'ˢmis qa ē'ëx·bēs wā'x·-sbaˢyas. Wä, lē yū'duẋᵘdɛn lā'xɛns q!wā'q!wax·ts!ānaˢē, yîx wā'sgɛmasas; yîx gwē'x·sdɛmas ˢlā'ˢlapk·ɛnas Mr. Smith lāx ō'xɫalīsas Tsā'xisēxa lē'ɛl-x·ɛnē xā'qa. Wä, hë'ɛm dō'kulaxa dzaˢwu'nasa g·ā'lä bɛgwā'nɛma, yîxs k·!eâ's mā'uła mā'małˢax g·ā'xa, yîsōs gā'ʟayōx.

Wä, g·î'lˢmēsē gwā'łɛxs la'ē axk·!ā'-laxēs gɛnɛ'mē qa k!ulx·ˢī'dēs lā'xēs sɛˢya'. Lā'ɫax gwē'x·dɛmas sɛˢya'sa g·ā'lä ts!ē'daqɛxs g·î'lsg·îlt!aas sɛˢya', yîxs k·!ē'saē q!ā'sq!ɛlxɫālē ts!ē'daqasa g·ā'lä bɛgwā'nɛma â'ˢmaē yā'akwa. Wä, g·î'lˢmēsē k!waē'łɛxs la'ē qɛdzē'łēs sɛˢya' lā'xa aˢwī'nagwiłē. (Â'ˢmɛn ˢnēx·qɛn yā'wasˢīdē guyoyō'ẋˢwīd lāq, qaxs k·!eâ'saē la g·î'lsg·îlt!asōx sɛˢyä'xsa ā'łē ts!ē'dāqa.) Wä, g·î'lˢmēsē hë'łˢē k!u-lā'nɛmasa ts!ɛdā'qē lāx sɛˢyä'sēs hë'ł-k·!ōdɛnwaˢyasēs x·ō'msaxs la'ē hë'ɛm q!ałˢē'dɛq qa yā'yūduẋᵘts!agēsēs. Wä, g·î'lˢmēsē gwāł q!ā'łaqēxs la'ē ts!âs lā'xēs łā'ˢwunɛmē. Wä, laɛ'm mā'g·a-anɛwīltsa ʟ!ā'gayuwē, yî'xa yîłbā'ˢyaa-

[1] Riverside Beach, Fort Rupert.

crossing-bone-for-the-kelp-fish, for that is the name of the round bone.

Then the man takes the back-sinew of a deer and splits it, for it has been dried; for as soon as a deer has been caught in a trap, it is skinned at once, and hide (without hair) is made of its skin. Then the sinew on the back between the shoulder-blades is cut, and it is pulled off down to the small of the back. The flesh on it is scraped off. As soon as it is all off, it is stuck on the front-boards of the house. However, it does not take long before it is dry. This is split by the man into thin lines the thickness of this thread.

Then he takes one of the round bones; and he also takes the plaited hair, and he puts its end a little to one side of the middle of the bone. Then it is tied on with sinew (as far as the middle of the bone). Now it is ready.

Then he goes to get bait; namely, mussels. As soon as he has the mussels, he ties the end of the nettle-line to the end of the plaited hair-line which is next to (the bone). Then he goes aboard the little canoe that is to be his fishing-canoe.

As soon as he reaches the place where he will fish, he throws into the water his stone anchor. The end of the anchor-line is tied to the canoe. Then he takes one of the mussels and breaks it. He takes off the mantle [the two flat pieces of dried halibut inside]. Then he takes his bone hook and ties the mantle [the two flat pieces of dried halibut inside] of the mussel around it. He ties it on [its back]

sasa xā′qē gā′galōt!Exōyoxa pEx·ī′tē, qaxs hë′ˢmaē ɫē′gEmsēda lā′x·Enē xā′qa.

Wä, lē′da bEgwā′nEmē axˢē′dxa adē′-g·aˢyasa gē′wasē qaˢs dzEdExsE′ndēqēxs laˈē lEmō′kwa, qaxs g·ɬ′lˢmaē k·!ɬ′lx·-tsɫowēda gē′wasē lā′xa k·!ɬ′lg·ayâxa gē′wasē, laˈē hë′x·ˢidaEm sap!ē′tsEˢwa, qaxs k·!îlx·īwa′kwīlasEwaˢēs pEsEna′ˢē. Wä, lē tɫō′sbEntsEˢwē adē′g·aˢyas lāx ˢnā′qawaˢyas Laq!udEnä′s. Wä, â′ˢmēs la qusō′yâ lā′g·aa lāx awagō′xɬaˢyas. Wä, lē k·ēxâ′layowē E′ldzEdzâˢyas. Wä, g·ɬ′lˢmēsē ˢwī′ˢlâxs laˈē k!udEdzō′yō lā′xa tsā′qEmaˢyasa g·ō′kwē. Wä, k·!ē′tɫa gē′x·ˢīd laˈē lE′mxˢwīda. Wä, hë′ˢmis la dzE′nxasōsa bEgā′nEmē qa wī′swułtowēs, yō wā′g·ita q!anō′x.

Wä, lē axˢē′dxa ˢnE′mtsɫaqē lā′xa lē′Elx·Enē xā′qa. Wä, lā′xaē axˢē′dxa q!ałEna′kwē sEˢya′ qaˢs k·ā′tɫendēs ō′baˢyas lā′xa g·ī′k·lōɬtslāˢē lāx ˢnEgō′yâyasa xā′qē. Wä, lē yîɬE′mnuxᵘsa ā′tɫEmē lāq. Wä, laE′m gwā′łāła lā′xēq.

Wä, lē tā′tēlaxa xō′lē. Wä, g·ɬ′lˢmēsē lâɬxa xō′läxs laˈē hë′x·ˢidaEm mō′xᵘbEntsa gu′nk·!Enē lāx ō′baˢyasa q!ałEna′kwē sEˢya′k·!Enē mā′g·aā′nōˢya. Wä, lē lāxs lā′xēs Lɫā′gatsɫēLē xwā′-xwaguma.

Wä, g·ɬ′lˢmēsē lā′g·aa lā′xēs Lɫā′gas-Laxs laˈē q!ElˢstE′ntsēs tɫē′sEmē q!E′l-dzEma. Wä, laˢmē mō′guxsē ō′baˢyasa q!E′ldzaā′nâˢē. Wä, lē axˢē′dxa ˢnE′ms-gEmē xō′la qaˢs tEpsE′ndēq. Wä, lē axō′dxa maˢłExsa′ k·!ā′wadzagēs. Wä, lē axˢē′dxa xā′xEnē Lɫā′gayōs. Wä, lē q!Enē′p!Entsa maˢłExsa′ k·!ā′wadzagēsa xō′lē lāq. Wä, lē yîɬē′g·Entsa dzExE-

with the split sinew. It is thus when it is baited.[1]

Then he takes a smooth long stone of the thickness of the little finger. That (the length of the little finger) is also its length. Then he ties it on with a half-hitch at each end at the place where the nettle-line and the plaited hair-line next to the hook are tied together. It is the sinker. Then he throws it into the water.

As soon as it reaches the bottom, he pulls it up a little, so that it is a short distance from [below] the ground. As soon as he has a bite, he pulls it up. Now the round bone is crosswise in the gills of the kelp-fish, or it is crosswise in the inside of the stomach. The man just puts his first-finger into the mouth of the kelp-fish and takes off the throat-crossing-bone, for that is the name of the hook. As soon as he has enough, he goes home.

kwē′ ā′tlEm lāq. Wä, la′g·a gwä′łēg·adaxs la′ē tē′lkwa.[1]

Wä, lē ax^{s}ē′dxa soxusE′mē g·î′ltsEm tlē′sEma, yū′Em wā′g·ita sE′ltläxsEns a^{s}yasō′x; wä, yū′Em^{s}xat! wā′sgEmōx. Wä, lē q!udzEmk·E′ntsa g·ä′g·īLEla lāx mō′mak·ōda^{s}yasa gu′nk·!Enē ḷE^{s}wa q!ałEna′kwē sE^{s}ya′k·!En mā′g·aanâ^{s}ya. Wä, laE′m q!Elē′x^{u}s. Wä, lē ts!Enx^{u}stE′ndēs.

Wä, g·î′l^{s}mēsē lā′g·alīsExs la′ē nanē′xōstōdā′laq qa waē′sēs lā′xa banē′. Wä, g·î′l^{s}mēsē q!Ex·^{s}ī′tsōxs la′ē dEnx·^{s}ī′dEq. Wä, la^{s}mē gā′lōt!Ega^{s}ēda lē′x·Enē xāq lāx q!ō′sna^{s}yasa pEx·ī′tē ḷōxs la′ē gā′lōtałaē lā′xa a^{s}wī′LEläs a^{s}wā′xsta^{s}yas pō′xunsas. Wä, â′^{c}mēsē ts!Emē′Lasēs ts!Emā′lax·ts!āna^{s}ē lāx sE′msasa pEx·ī′taxs la′ē lawEyō′dxēs gagā′lōt!Exawayowē, qaxs hë′^{s}maē ḷē′gEmsa L!ā′gayuwē. Wä, g·î′l^{s}mēsē hë′łōLExs la′ē nä′^{s}nak^{u}, lā′xēs g·ō′kwē.

The Koskimo claim that in olden times they fished halibut with a trolling-hook, that the curved hooks which are used at present were obtained from the Newettee.

Harpoons. — The harpoon is used particularly for hunting porpoise, and also, to a certain extent, for catching salmon. The type used for both purposes is practically the same, except that the porpoise-harpoon is heavier than that used for salmon. The shaft is made of red-pine wood, which is obtained from fallen trees. To find a tree of this kind is considered a piece of good luck, and is celebrated by a feast, at which the finder presents pieces of wood to his friends.

The harpoon-point consists of three parts, — two flaring bone hafts which fit close together, and a point which is inserted between them (Fig. 156). Points of this kind have been found in considerable numbers in the shell-heaps of this coast.[2] The one shown in Fig. 156, *b*, was excavated on top of the

[1] The mantle of the mussel is wrapped around the bone hook so that it is thickest in the middle, and so that the hair-line passes out between the two sides of the mantle. The sinew is tied around it spirally.

[2] See, for instance, Smith, Archaeology of the Gulf of Georgia and Puget Sound (Vol. II of this series, p. 388).

bluff at the north side of Nimkish River. In olden times they were made of the ulna of the elk, and also of antler. They are used both for salmon-fishing and for porpoise-hunting. The points of the salmon-harpoons consist of a sharpened splint of bone or a wire nail, and are gummed over to prevent their tearing the salmon. The point and hafts used for porpoise-hunting are much larger (Fig. 157), and the point (LEG·Î′k^{u} Kwag·uł, from LEK·ē′, "barb;" gā′ḷîk^{u} [Nak!waxda^{s}x^{u}]; dzān [Newettee]) is always barbed, or has at least a cutting-blade. It is claimed that the ancient porpoise-harpoon point had always seven barbs. It is noticeable that in the barbed points found by Mr. Smith along the Gulf of Georgia, points with from six to eight notches are of frequent occurrence. It is said that the point always has a flange in that portion inserted between the hafts, on the side opposite the barbs, and that the inner faces of the hafts are cut out correspondingly, thus holding the point securely. The barbs of the point are placed so that they stand in the plane of the joint of the two halves of the haft. A similar flange occurs in the specimen referred to before, which has been described by Mr. Smith. The two barbs are firmly tied together with a wrapping made of nettles or sinew, nowadays of twine. A line about three-quarters of a fathom long is attached to the harpoon-point, running off from the side on which the barbs are. It is made of the guts of sea-lions or of bears, and is plaited in five strands. When the line is pulled taut, the point turns over in such a manner that the flaring tips of the two halves of the haft act as barb-points.

Fig. 157 ($\frac{1}{4}\frac{8}{4}$). Porpoise-Harpoon. Length, 18 cm.

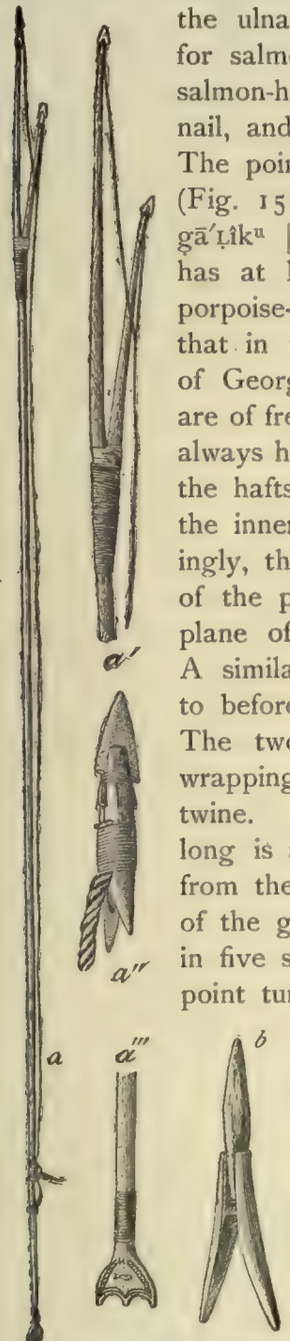


Fig. 156, *a* ($\frac{1}{5}\frac{8}{0}\frac{8}{0}$), Salmon-Harpoon (length of shaft, 550 cm.); *b* ($\frac{1}{4}\frac{6}{1}\frac{6}{2}\frac{6}{5}$–$\frac{1}{4}\frac{6}{1}\frac{6}{2}\frac{6}{7}$), Harpoon-Point (length, 9 cm.).

The harpoon-shaft is two fathoms and a half long. It has two prongs or foreshafts of different lengths. The harpoon-points are so attached that the one on the shorter prong of the shaft is tied to the line of the one placed on the longer point of the shaft. The line to which both are attached is made of cedar-bark. It is from twenty to twenty-five fathoms long. The shaft of the salmon-spear is of the same form as that of the porpoise-spear, but is very light.

A loop is attached to the shaft, through which the harpoon-line passes. This loop has the effect of holding the shaft to the line after the point has been detached.

Following is a detailed description of the method of making the harpoon: —

Now a pitchy pine-tree is searched for, one that is not crooked and straight when split. As soon as (the man) finds it, he measures off two fathoms and a half, and cuts into it. When he has chopped in to the heart (of the tree), he takes his wedges and places them against the thin end of what is to be split. Then he strikes the top (of the wedges) with his hammer to drive them in.

As soon as (the piece of wood) falls on its back, he wedges it into pieces, for he tries to get the pitch-wood inside. As soon as he gets it, he splits it so that it is three finger-widths wide; that is its thickness on each side, for it is square. As soon as it is done, he carries it home on his shoulder.

Wä, hë'ɛm la ā'läsɛ^{s}wa baxō'tlɛqɛla wunā'guła, yîxs k·lɛ'saē k·lɛ'lpɛla, yîxs ^{s}nā'qlɛqaē laxō'x kwɛk·ā'sɛwēx. Wä, g·î'l^{s}mēsē q!ā'qēxs la'ē hë'x·^{s}idaɛm bā'ł-^{s}îdxa ^{s}nā'qlɛbōdäs bā'bɛlawa^{s}yaxs la'ē tɛ'mx̣^{s}wîdɛq. Wä, g·î'l^{s}mēsē lā'g·aa tɛ'mkwa^{s}yas lā'xa dō'maqaxs la'ē ax-^{s}ē'dxēs lɛ'mlɛmg·ayōwē qa^{s}s q!waē'ł-bɛndēs lā'xa wī'łba^{s}yasēs łā'tlasɛ^{s}wē. Wä, lē pɛlgɛtō'tsēs pɛ'lpɛlqas, la'ē dē'x^{s}wēdɛq.

Wä, g·î'l^{s}mēsē nɛlâ'xs la'ē lɛ'mlɛmx·sɛnd, qaxs lā'lōl!aaxa wɛyō'q!wɛga^{s}ē bɛxō'ta. Wä, g·î'l^{s}mēsē lō'łqēxs la'ē lɛ'mx·^{s}îdɛq qa yaēyū'dux̣^{u}dɛnēlälēs lā'xɛns q!wā'q!wax·ts!āna^{s}ēx, yîx wa'g·ē-dasas wā'x·sōt!ɛna^{s}yas lā'xēs k·lɛwɛl-k!wē'na^{s}ē. Wä, g·î'l^{s}mēsē gwā'łɛxs la'ē wē'k·ɛlaqēxs la'ē nä'^{s}na x̣^{u} lā'xēs g·ō'kwē.

Then he puts it down on the floor of his house and he takes his adze. Immediately he adzes what is to be its grasping-end (*a*). Then he measures two spans, and, beginning at *d*, he adzes it going towards *c*, so that it becomes flat. Then he turns it over and does the same on the other side. That is called the end of the harpoon-shaft (*c*); and that (*a*) is the grasping-end; and these (*b*) are the holes for grasping, the two holes. And *d* is the small of the back of the harpoon-shaft, and *e* is the neck of the harpoon-shaft; and *f* is the upper prong, and *g* the lower prong; *h* is the body of the harpoon-shaft.

As soon as the end is flat, he adzes the body so that it is straight. Then

Wä, lē wēx·^{s}ā'lîłaq. Wä, lē ax^{s}ē'dxēs k·lɛ'mɬayuwē. Wä, hë'x·^{s}ida^{s}mēsē k·lî'mł^{s}îdɛx xabā'ts!ɛxsdēɛas (*a*). Wä, laɛ'm bā'ł^{s}îdxa ma^{s}łp!ɛnk·ē lā'xɛns q!wā'q!wax·ts!āna^{s}yaxs la'ē g·ä'g·ilɛla lāx *d*, la'ē k·lî'mł^{s}îdɛq gwɛyōłɛla lāx *c* qa pɛ'lbax·^{s}îdēs. Wä, lē lē'x·^{s}îdɛq. Wä, lā'^{s}xaē hë'ɛm gwē'x·^{s}îdxa apsā'-dza^{s}yas. Wä, hë'ɛm ɻē'gadɛs ō'xsda^{s}ya mā'stowē (*c*). Wä, hë'^{s}mēs xabats!ɛxs-da'^{s}ē (*a*); wä, hë'^{s}mis xabastâ'yaxa (*b*) mā'^{s}łdzɛk·ē kwā'kux̣wāła. Wä, hë'^{s}mis awā'gōxɻāsa mā'stowē (*d*). Wä, hë'-^{s}mis ō'xāwa^{s}yasa mā'stowē (*e*); wä, hë'^{s}mis ë'k·!ōdɛxstē dzē'gumē (*f*); wä, hë'^{s}mis bɛ'nk·!ōdɛxstē dzē'gumē (*g*). Wä, hë'^{s}mis ō'gwidēsa mā'stowē (*h*).

Wä, g·î'l^{s}mēsē la pɛ'lbax·^{s}îdēda ō'xs-da^{s}yaxs la'ē k·lî'mł^{s}îdxa ō'gwîda^{s}yas qa

it gets thinner, beginning at the neck (*e*) and going to the small of the back (*d*). The thickness of the neck of the harpoon-shaft is two finger-widths after it is round. The thickness of the small of the back is one finger-width. Then he takes his crooked knife and shaves it until it is smooth, and also the grasping-end.

As soon as this is done, he goes to the bank of the river and gets wood for the prongs, for that is the place where the harpoon-prong tree grows. He looks for one that is thick and long and straight. As soon as he has found it, he chops it down at the butt-end so that it falls. He measures the length of three spans and cuts it off.

As soon as it is off, he splits it in two right through the heart of the wood. When it is in two pieces, he chops off the heart of the wood so that it all comes off. When it is all off, he chops off the sap. As soon as it is all off, he carries it home.

Then he puts (the pieces) down on the floor, not too near the fire of his house. He takes his straight-edged knife and whittles it so that it is thick at one end and thin at the other. Now it is round. Then he measures the length of one span from the thick end and cuts a notch. The depth of the notch is one-half a finger-width. Then he whittles it off, beginning at the thick end, and he stops at the notch. As soon as his whittling stops at the notch, he shaves it off towards

ˢnEqElē′s. Wä, lē wīlˢnā′kula g·ä′xˢīd lā′xa ō′xawaˢē (*e*) lā′laa lā′xa aˢwā′gōxLaˢyas (*d*). Wä, laˢmē ma′ˢłdEnx·sâ lā′xEns q!wā′q!wax·ts!ānaˢēx, yîx wā′g·it!ExEwasas ō′xawaˢyasa mā′stâxs la′ē lē′x·EndEq. Wä, lē ˢnE′mdEnx·sâ lā′xEns q!wā′q!wax·ts!ānaˢēx, yîx wā′g·itōxLaasasa aˢwā′gōxLaˢyas. Wä, lē axˢē′dxēs xE′lxwāła qaˢs aē′k·ē k·!ā′xˢwīdEq qa qēsE′nx·ˢīdēs, LEˢwa xā′bats!Exsdaˢē.

Wä, g·î′lˢmēsē gwā′łExs la′ē lāx ō′gwäyasa wa qaˢs lē axˢē′d dzā′dzēqwama qa dzē′gums, qaxs hë′ˢmaē q!wā′xatsa dzā′dzēqwama. Wä, lē alä′x·ˢīdxa LEkwē′ LEˢwa g·î′lt!a ˢnE′qEla′. Wä, g·î′lˢmēsē q!ā′qēxs la′ē hë′x·ˢīdaEm sō′p!ExLEndEq qa t!ā′x·ˢīdēs. Wä, lē ˢmE′nsˢīdxa yū′duxᵘp!Enk·ē lā′xEns bā′LAx yîsEns q!wā′q!wax·ts!ānaˢēx. Wä, lē tE′mxˢwīdEq.

Wä, g·î′lˢmēsē lā′x·saxs la′ē ˢnā′q!Eqax dō′maqasēxs la′ē kuxsE′ndEq. Wä, g·î′lˢmēsē la maˢ′łts!Exs la′ē sōpâ′lax dō′maqas qa ˢwīˢ′lâwēs lā′wä. Wä, g·î′lˢmēsē ˢwīˢ′lâxs la′ē sō′pâlax xō′dzēg·aˢyas. Wä, g·î′lˢmēsē ˢwīˢ′lâxs la′ē LŌ′xulaq qaˢs lē nä′ˢnaxᵘ lā′xēs g·ō′kwē.

Wä, lē LŌ′xˢwalīłaq lā′xa k·!ē′sē ˢnExwā′ła lā′xa lEgwī′łtsēs g·ō′kwē. Wä, lē axˢē′dxēs ˢnExx·ä′ła k·!ā′wayâ. Wä, lē k·!ā′xˢwīdEq qa LEkwē′s apsbaˢ′yas. Wä, lē wī′ła a′psbaˢē. Wä, laE′m lē′x·Ena. Wä, lē ˢmE′nsˢīdxa ˢnE′mp!Enk·ē lā′xEns q!wā′q!wax·ts!ānaˢēx wā′sgEmasasa g·ä′g·îLEla lāx ō′baˢyasa LEō′xᵘbaˢē. Wä, lē k·!ī′mt!ēdEq; wä, lē k·!ō′dEn lā′xEns q!wā′q!wax·ts!ānaˢyaqē ˢwā′labEdasa. Wä, lē k·!axâ′laq g·ä′g·îLEla lā′xa LExᵘbaˢ′ē la wā′la lā′xa k·!ī′mtaˢē. Wä, g·î′lˢmēse wā′laxLē k·!ā′xwaˢyas lā′xa k·!ī′mtaˢyaxs la′ē gwagwa′aqEla k·!ā′xwaq lā′xa

the thick end, so that it is thin. As soon as the prong he is making is done, it is like this.[1]

Then he makes also the lower prong, and he just does right in the same way as he did to the upper prong, and the lower prong is a short span shorter than the upper prong.

As soon as this is finished, he takes bark of *Prunus* and the harpoon-shaft, and he shaves it off at the neck, where the prongs are to be. It is shaved off so that both butt-ends of the prongs fit on both sides of the neck of the harpoon-shaft. As soon as they fit on, he pushes the neck of the harpoon-shaft against the notches in the butt-ends of the prongs; and he takes a narrow strip of *Prunus*-bark and ties it on firmly, beginning at the notches, and going towards the thin end of the prongs. As soon as this is done, he cuts [through] the two finger-holes.

As soon as this is finished, he takes the [dog-fish] back-skin of the dog-fish, which has been dried, and rubs the harpoon-shaft, and he only stops when it is really smooth.

As soon as this is finished, he takes the squid-hook to pull out a squid. When he has a squid, he takes out the guts. Then he takes the [black] sepia which is close to the guts, and ɫexᵘba′ˢyas lā′laa lā′xa ma′x·baˢyas qa pE′lbēs. Wä, g·î′lˢmēsē gwā′ɫē dzē′qwēlaˢyasēxs la′ēg·agwä′ɫēg·a.[1]

Wä, lē ē′tlēdxa bE′nk·!ōdExstaˢē dzē′guma. Wä, lē â′Em nEk·E′mg·îɫtEwēxēs gwē′g·ilāsaxa ë′k·!ōdExstaˢē dzē′guma. Wä, lē ˢnE′mp!Enk· lā′xEns ts!Exᵘts!ā′naˢēx q!wā′q!wax·ts!ānax, yîx ts!Ekwā′gawaˢyas bE′nk·!ōdExstaˢē dzē′gum lā′xa ë′k·!ōdExstaˢē dzē′guma.

Wä, g·î′lˢmēsē gwā′ɫExs la′ē axˢē′dxa ɫE′nˢwumē ɫEˢwa mā′stowē. Wä, lē k·!ā′xˢwīdEx axā′ɫaasLasa dzē′gumē lāx ō′xawaˢyas. Wä, laE′m k·!ō′kwa qa bE′nEmg·aa′LElēs wā′x·sōdîɫas ō′xɫaˢyasa dzēdzē′gumē lāx wā′x·sōt!Exā′waˢyasa mā′stowē. Wä, g·î′lˢmēsē bE′nEmg·aa′LElaxs la′ē wī′waqōtsa ō′xawaˢyasa mā′stowē lāx aˢwā′gawaˢyasa ō′xɫaˢyasa dzēdzē′gumē. Wä, lē axˢē′dxa ts!ē′q!adzowē ɫE′nˢwuma qaˢs ła′lak!utlē yîłā′LElōts g·ā′yabāla lā′xa qE′mdEkwē la guyō′ɫEla lāx pē′pElbaˢyasa dzēdzē′gumē. Wä, g·î′lˢmēsē gwā′ɫExs la′ē k·!ē′yîmx·sōdxa ma′ˢłdzEqē xabastâ′ya.

Wä, g·î′lˢmēsē gwā′ɫExs la′ē axˢē′dxa x·ulgwē′g·aˢyasa xu′lgumaxs la′ē lEmō′kwa. Wä, lē xu′lxundxa mā′stowē. Wä, ā′łˢmēsē gwā′ɫExs la′ē â′lak·!āla la qē′sEna.

Wä, g·î′lˢmēsē gwā′ɫExs la′ē axˢē′dxēs nē′dzayâxa tEq!wa′ qaˢs lē nē′sax tEq!wä′. Wä, g·î′lˢmēsē lâ′ɫxa tEq!wä′xs la′ē hë′x·ˢīdaEm lā′wEyōdEx ts!Enē′xas. Wä, lē axˢē′dEx bē′x·bēk·!äsxa ts!ō′ɫtowē axā′ła lāx ts!Enē′xas. Wä, lē x·îx·ts!ō′ts lā′xa xō′xuɫk·!Emō′tasa ˢwā′-

[1] A small notch is made around the prong, particularly on the outer side, which holds the wrapping of birch-bark. This may be recognized in Fig. 156, *a′*. The notch here described is made a little nearer the butt-end of the prong, which is from here on whittled down on the inner side so as to present a flat surface, which fits on the flattened neck of the harpoon-shaft.

squeezes it out into the shell of a large clam. Then he goes home, carrying the shell.

Then he puts it down in his house, and he takes soft shredded cedar-bark and the harpoon-shaft, and he dips the soft shredded cedar-bark into the sepia and rubs it on the harpoon-shaft. As soon as it has been painted over, he takes it out of the house and puts it up against a board, so that it is blown on by the wind and (exposed to) the sun, so that the sepia which is painted on it dries quickly. As soon as it is dry, the harpoon-shaft is black. Then for a short while he stops working on the harpoon-shaft.

The porpoise-hunter also tries to get guts of the black bear and of the sea-lion for his harpoon-line, (to be used) when he spears porpoises and seals. When he has a black bear or a sea-lion, he takes his carving-knife and cuts open its belly. Then he takes out the guts; and as soon as they are all out, he cuts off the guts close to the stomach, and he also cuts off the other end close to the anus, and he squeezes out what is in them.

As soon as all that is in it is out, he stretches the guts outside of his house; and when they are nearly dry, he takes a short piece of cedar-wood and puts it crosswise to one end of it; but he never unties the other end. Then he holds the cedar stick across the one end and pulls it tight, turning at the same time the cedar cross-piece. As soon as it has been twisted strongly, lasē mɛtɬā′naˢya. Wä, hë′xˑˢidaˢmēsē gˑāx kˑā′laxa xō′xuɬkˑɬɛmō′taxs gˑā′xaē nä′ˢnakwa.

Wä, lē kˑā′gˑalɪɬas lā′xēs gˑō′kwē. Wä, lē axˢē′dxa qɬō′yaakwē kˑā′dzɛkwa ɫɛˢwa mā′stowē. Wä, lē dzō′pˢstɛntsa qɬō′yaakwē kˑā′dzɛkᵘ lā′xa bē′xˑbēkˑɬa. Wä, lē dzē′gˑîɬɛnts lā′xa mā′stowē. Wä, gˑî′lˢmēsē hamɛ′lxɛnxs la′ē lā′wɛlsas lā′xēs gˑō′kwē qaˢs lē ɫā′xsēgˑîlsa lāx tsā′gɛmas qa yâ′lasɛˢwēsēsa yâ′la ɫɛˢwa ʟɬē′sɛla qa hā′labālis lɛ′mxˢwīdēda gɛ′lsɛnaˢē bē′xˑbēkˑɬasa tɛqɬwa′. Wä, gˑî′lˢmēsē lɛ′mxˢwīdɛxs la′ē tsɬō′ɬna mā′stowē. Wä, laɛ′m yā′wasˢīd gwā′ɬa mā′stowē lā′xēq.

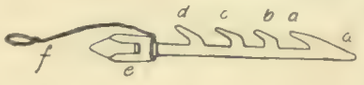
Wä, hë′ˢmēs ē′tɬēd qɬapɬä′yasōsa alē′wīnoxwa tsɬɛyî′masa ʟɬā′ˢē ɫɛˢwa ʟɬē′xɛnē qaˢs sɛgˑaā′nɛwēxs sɛkˑaa′xa kˑɬō′lōtɬē ɫɛˢwa mē′gwatē. Wä, hë′ˢmaaxs gˑā′laē lâ′ʟxa ʟɬā′ˢē ɫōˢma ʟɬē′xɛnē; wä, hë′ˢmis gˑîl axˢē′tsōsēs qwā′gayuwē kˑlā′wayâ qaˢs qwaxˢē′dēx tɛkˑlä′s. Wä, lē axˢwutsɬō′dɛx tsɬɛyî′mas. Wä, gˑî′lˢmēsē ˢwīlâɬtsɬâxs la′ē tɬō′sōdxa tsɬɛyî′mē lāx mā′gˑaanâˢyasa pō′ɣunsē. Wä, lā′ˢxaē tɬō′sōdxa apsba′ˢyas lā′xa makˑā′ɬa lāx mɛ′ngˑasas. Wä, lē xˑî′xˑˢēdɛq qa lawä′yēs gˑē′tsɬɛwäq.

Wä, gˑî′lˢmēsē ˢwī′ˢlōɬtsɬâ gˑī′tsɬɛwaqēxs la′ē tsɬā′sɛlsaq lāx ʟɬā′sanâˢyasēs gˑō′kwē. Wä, gˑî′lˢmēsē ɛlā′q lɛ′mwɛmxˑˢīdɛxs la′ē axˢē′dɛx tsɬō′ɣᵘstowē klwaxʟā′wa qaˢs gē′bɛndēs lā′xa apsba′ˢyas. Wä, lā′ɫa hëwä′xaɛm qwē′ɬˢīdxa apsba′ˢyas. Wä, lē dā′ɬaxa klwaxʟā′wē la gē′bäsa a′psbaˢyaxs la′ē ɬɛkɬutā′ɬa nē′xāɬaqēxs la′ē xˑî′lpaxa gē′baˢē klwaxʟā′wa. Wä, gˑî′lˢmēsē la ɬɛkɬutstō′wē xˑî′lpaˢyasēxs la′ē ɬɛkɬutɬē′d

he pulls it tight, stretches it, and ties it outside the house, so that it gets really dry. The same is also done with the guts of the sea-lion.

As soon as he has made much of this, he asks his wife to plait it, and his wife plaits it. Then it is made into a three-stranded line. As soon as it is twelve fathoms long, it is the right length. This is to be the harpoon-line for the harpoon-shaft of the porpoise-hunter and of the seal-hunter.

Her husband, however, makes the barbed harpoon-point in this way, of this bone (see illustration). And he does it in the same way of iron; and this is named the "barb point" (*a*), and this the "barb" (*b*), and this the "middle barb" (*c*), and this the "rear barb" (*d*), and this the "bone shaft-socket" (*e*), and this the "gut line" (*f*). This is the barbed point for the upper prong of the harpoon-shaft, but the barbed point for the lower prong of the harpoon-shaft is a little shorter.



As soon as this is finished, he takes a large stomach of a seal to be the float in the middle of the harpoon-line, and also a thin plaited line (made of sea-lion guts) two spans long, which is to be the guide-line of the harpoon-shaft for the harpoon-line to go through.[1] As soon as this is finished, he ties (the harpoon-points) on the harpoon-shaft; and when he has everything that belongs to it, he finishes; and this is the tying the half-hitch of the harpoon-line;[2] and so as soon as the porpoise-hunter nē′xˢēdEq qa ts!ā′sˢēdēsēxs la′ē mō′ẋ-ˢulsaq qa â′lax·ˢīdēs lE′mẋˢwīd. Wä, lā′ˢxaē hë′Emˢxat! gwē′g·ilasEˢwē ts!Eyî′-masa L!ē′xEnē.

Wä, g·î′lˢmēsē la q!ē′nEmē axa′ˢyas, la′ē g·ā′g·ōnas lā′xēs gEnE′mē qa q!ā′ł-ˢīdē′sēq. Wä, lē gEnE′mas q!ā′łˢīdEq. Wä, laE′m yā′yūduẋᵘts!āg·ēsē q!ā′laˢēs. Wä, g·î′lˢmēsē g·ä′g·iwālap!Enk· lā′xEns bā′LäxS la′ē hë′łasgEma. Wä, laE′m q!E′lgwats!Exsdēłts ma′stâsa alē′wīno-xwaxa k·!ō′lōt!ē ẹˢwa′ mē′gwatē.

Wä, lā′ẹa łā′ˢwunEmas LEg·Ekwī′laxa LE′g·Ekwēxa g·a gwä′łēg·a (illustration). lā′xwa xā′qēx. Wä, lē yū′Emˢxat! gwä′łōxda dzE-x·î′nēx. Wä, hë′ˢmis ẹē′-gadEs ẹEx·ba′ˢē (*a*); wä, hë′ˢmis LE-k·a′ˢē (*b*); wä, hë′ˢmis LEg·ō′wōyâˢē (*c*); wä, hë′ˢmis LEg·E′k!uxLēˢ (*d*). Wä, hë′ˢmis xā′qē ma′ts!LēS (*e*). Wä, hë′-ˢmis (*f*) g·a′g·aanoˢya ts!ā′ts!ēwē′sa. Wä, laE′m ë′k·!ō′dExstē LEg·E′ẋᵘsa ma′stowē. Wä, lā′ẹa ts!ā′ts!akwāłē LEg·Ekwa′sa bE′nk·!ōdExstaˢyasa mā′-stowē.

Wä, g·î′lˢmēsē gwā′łExs la′ē axˢē′dxa ˢwā′lasē pō′ẋuntsa mē′gwatē qa pō′-woyowēsēs q!E′lkwē. Wä, hë′ˢmēsa wī′łEnē q!Eła′kwē ts!ā′ts!ēwēsaxa maˢł-p!E′nk·as wā′sgEmasē lā′xEns q!wā′-q!wax·ts!ānaˢēx. Wä, hë′Em t!ama-k·!Exā′wēsa mā′stowē qa nēx·sâ′latsa q!E′lkwē. Wä, g·î′lˢmēsē gwā′łExs la′ē ˢmE′nsˢaLE′lōts lā′xēs mā′stowē. Wä, g·î′lˢmēsē wī′lg·aaLElē gwēłgwä′läsēxs la′ē gwā′ła. Wä, hë′Em mō′xẹaˢē, yîx mā′ẋwałaasasa q!E′lkwē. Wä, g·î′lˢmēsē sEx·ˢī′dēda alē′winoxwaxa k!ō′lōt!axs

[1] This is the loop attached to the neck of the harpoon-shaft (see p. 489).

[2] It was shown here that the harpoon-line is attached near the middle of the harpoon-shaft with a half-hitch; that is to say, with half a bowknot.

throws the harpoon and pulls the harpoon-line, (the knot) of the harpoon-line comes out when the barbed points go into the porpoise.

la′ē nē′x^{s}ēdxa q!ɛ′lkwē; wä, hë′^{c}mis la qwē′ł^{s}ēdaatsa q!ɛ′lkwaxs lā′aɬ lā′-bɛtēda LELEg·ɛ′kwē lā′xa k·!ō′lōt!ē.

The salmon-spear of this type is used either in the canoe or by fishermen standing on rocks in the river, but only a few places are adapted to this method of fishing. On the upper course of the Nimkish River, salmon are speared even in muddy water. This method of spearing is called t!ā′t!aq!wa. When the spear is thrown, the left hand holds the end of the line, and supports the spear as near the middle as the arm can reach. The right hand grasps the end, the fingers resting in the notches of the handle. The handle of the spear slides through the hollow of the left hand. The notched handle-end is a device clearly related to the throwing-stick. In some harpoons there are two holes placed side by side and about 2 cm. apart for the first and second fingers; these are also similar to the finger-holes of throwing-sticks. The porpoise-spear has a buoy made of the stomach of a seal, attached to the middle. The stomach is tied up at both ends. The anterior end is sometimes provided with a wooden blow-piece and stopper. After the porpoise has been hit, the harpoon-shaft slides back along the line until it reaches this buoy.

The harpooneer's canoe is hardly spread at all. It has a long sharp bow, long enough for the harpoon-shaft to rest in it when the end of the shaft lies next to the harpooneer on his seat. The bow is provided with a rest for the harpoon (Fig. 158), which prevents it from slipping off. This type of canoe is called ła′tq!āla. The short, sharp, vertical edge under the bow of the canoe (see Plate xxx) is rounded off below in order to prevent its making noise when cutting through the water. The lower point of this edge is charred. The walls of the canoe are very thin.

Fig. 158 ($\frac{8}{21}$). Harpoon-Rest for Bow of Hunting-Canoe. Length, 36 cm.

The paddle is made of the best kind of yew-wood without any knots. It is polished carefully. It is one fathom and a short span long. The grip and the rounded handle-part are farther apart than in the ordinary paddles (see Fig. 118, *c*). The blade is very thin and elastic. It has a sharp point to prevent it from making a noise. The noise made by this paddle is called

pˈEqˈāˊla; i. e., emitting the short dull sound *p!* when the point enters the water. Each man has two paddles, because sometimes, with the sudden backing and vigorous paddling just before the harpoon is thrown, the blade of the paddle will break.

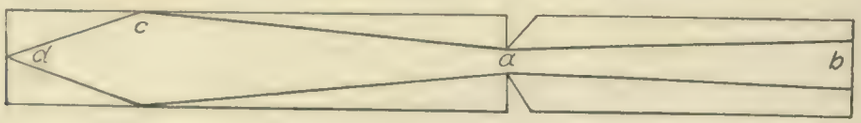
Following is a description of the making of the paddle: —

Now I will talk about the making of the paddle to be the paddle of the porpoise-hunter and of the steersman. When the paddle-maker goes into the woods to search for yew-wood as material for his paddle, he carries his axe. As soon as he finds a good (tree) which is not twisted and is three spans thick, he chops it down and it falls. Then he measures one fathom and two spans and chops it off. As soon as it is off, he marks a line straight through the heart of the tree, and takes a new wedge and drives it into the heart (of the tree). He drives it in with the axe.

As soon as the (wood) splits, he takes one half and chops it so that the sap all comes off, and he continues chopping it until it gets thin, so that it is three finger-widths thick; and he chops off the heart so that it comes off. Then he measures three spans, beginning from the top downward, which is to be the upper part of what is to be the paddle. Then he chops it in so that it is notched (*a*). As soon as it has been chopped in, he also does the same on the other side. Then it is this way:

Wä, laˢmēˊsEn gwāˊgwēxˑsˢālał lāˊxa sēˊẋwīlax alēˊẋᵘsayuLasa alēˊwēnoxwē, sēˊsEwayâ ḷEˢwēs kˈwaxḷaˊˢē. Wä, hēˊˢmaaxs laēˊda sēẋwīˊlaēnoxwē lāˊxa āˊLˈlē āˊläx sēˊẋwālasa LˈEˊmqˈla dāˊlaxēs sōˊbayuwē. Wä, gˑîˊlˢmēsē qˈāˊxa ëkˑēˊtElaxa kˑˈlēˊsē kˑˈlEpaˊxs ḷōxs yūˊduẋᵘpˈEnxˑsēṣaē lāˊxEns qˈwāˊqˈwaxˑtsˈānaˢēx, yîx wāˊgˑidāsas, laˊē hëˊxˑˢīdaEm sōˊpˈExōdEq qa tˈāˊxˑˢīdēs. Wä, lē bāˊłˢīdxa ˢnEˊmpˈEnkˑē lāˊxEns awâˊsgEmxˑsEyapˈaāˊsēx, hëˊˢmēsa maˢłpˈEˊnkˑē lāˊxEns qˈwāˊqˈwaxˑtsˈānaˢēx ēˊsEgˑiwēsēxs laˊē sōˊpsEndEq. Wä, lē gˑîlˢmēsē lāˊxˑsExs laˊē maēˊłbEndEq ˢnaqˈEqax dōˊmaqasēxs laˊē axˢēˊdxēs āˊłˢmē LEˊmkˑīˊlaˢya qaˢs ˢnaqˈEqēˊs lāˊxa dōˊmaqas. Wä, lē dēˊgutōtsēs sōˊbayuwē lāq.

Wä, gˑîˊlˢmēsē kuˊxsExs laˊē axˢēˊdxa apsōˊdiłē qaˢs sōˊpˈlēdēq qa lāˊwäyēs ˢwīˊˢlē xōˊtsˈlēgˑaˢyas. Wä, lē hanaˊł sōˊpaq qa pEldzōˊẋˢwīdēs qa yūˊduẋᵘdEnēs wâˊgwasas lāˊxEns qˈwāˊqˈwaxˑtsˈānaˢēx. Wä, lē xāˊLˈExˑˢīdaEm sōˊpōlax dōˊmaqas qa ˢwīˊˢlâwēs. Wä, lē bāˊłˢīdxa yūˊduẋᵘpˈEnkˑē lāˊxEns qˈwāˊqˈwaxˑtsˈānaˢēx lāˊxa gˑäˊgˑîLEla lāx ōˊxtâˢyas banēˊˢsta lāˊxa ëˊkˑˈlōłtsˈaˢyasa sēˊwayūLaxs laˊē sōˊpˈlēdEq qaˢs tEˊmxˑbEtEndēq. Wä, gˑîˊlˢmēsē kˈwäˊbEtaxs laˊē hëˊEmˢxatˈ gwēˊxˑˢīdxa apsEˊnxaˢē. Wä lē gˑa gwäˊłēgˑa:



As soon as it is three fingers wide at *a*, he chops at *b* so that it is a little wider than at *a*; and he chops from *a* towards *c*. Now it is thin in the middle. Then he chops at *d* so that it is pointed. Now this is called an unfinished paddle.

As soon as this is done, he takes the other half (of the tree) and does the same as he did to the one that was first made. As soon as this is done, he carries them home on his shoulder. He puts away his axe and takes his long-handled adze. Then he puts down the unfinished paddle, and, beginning at the neck (*a*), he goes along towards *c*, adzing it on one side. Then he goes right on to *d*. He continues his adzing to the edge of the paddle, which is made thin, while it is thick in the middle all the way to the end. As soon as this is done, he also does the same to the other side.

When this is finished, he turns it over, and he does the same as he did to the opposite side. Now the paddle has thin edges; and he adzes again, beginning at *a* and going towards *b*. Then *a*, that is the neck of the paddle, is round, and it is flat at the top (handle end). He does the same on the other side.

As soon as this is done, he puts away his long-handled adze, and takes his crooked-knife and smoothes it down well. As soon as the paddle is really elastic, he takes red-pine wood and whittles it down so that it is round, so that it is just right for the hand to go around it when it is grasped

Wä, g·î'l^{s}mēsē yū'duẋ^{u}dEn lā'xEns q!wā'q!wax·ts!āna^{s}ēx, yîx wā'g·īdasasa (*a*) la'ē sō'p!ēdEx (*b*) qa ha'lsEla^{s}mēsē wā'wadzâłagawēs (*a*). Wä, lē sō'p!ēdEx (*a*), lā'laa lāx (*c*). Wä, la^{s}mē wī'lō- yuẋ^{s}wīda. Wä, lē sō'p!ēdEx (*d*) qa wī'łbax·^{s}īdēs. Wä, laE'm ḷē'gadEs xEts!ä' sē'wayu lā'xēq.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē ax^{s}ē'dxa apsō'diłē. Wä, â'Em^{s}xaā'wisē ^{s}naqE'mg·îłtōxēs gwē'g·i'lasaxēs g·î'lx·dē ē'axElasE^{s}wa. Wä, g·î'l^{s}mēsē gwā'łExs la'ē yî'lx^{u}sEyap!Entsēxs la'ē nä'^{s}nakwa lā'xēs g·ō'kwē. Wä, lē g·ē'xaxēs sō'bayuwē qa^{s}s ax^{s}ē'dēxēs qE'ndzayuwē. Wä, lē pax^{s}ā'liłxa xEts!a'^{s}ē sē'wayâxs la'ē g·ā'yabāla lā'xa ō'xawa^{s}yasē (*a*) qa^{s}s gwā'gwaāqalē qE'nsaq lāx (*c*) lā'xa apsE'nxa^{s}ē. Wä, lē hë^{s}nā'kula lāx (*d*). Wä, laE'm tsē'tāła gwā'gwaāqałē qE'nsa^{s}yas lā'xa awu'nxa^{s}yasa sē'wayuwē qa pE'lspElEnxēs qa t!E'nxdzâlēs hë'bEndalē ^{s}nEgEdzâ'^{s}yas. Wä, g·î'l^{s}mēsē gwā'łExs la'ē hë'Em^{s}xat! gwē'x·^{s}īdxa apsE'nxa^{s}yas.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē lē'x·^{s}īdEq. Wä, â'Em^{s}xaā'wisē ^{s}naqE'mg·iłtEwēxēs gwē'g·ilāsaxa apsa'dza^{s}ē. Wä, la^{s}mē pE'lspElEnxa sē'wayuwē. Wä, lē ē't!ēd qE'ns^{s}īd g·ä'g·îLEla lāx (*a*) gwā'gwaāqEla lāx (*b*). Wä, laE'm lē'x·Enē (*a*), yîx ō'xawa^{s}yas qa^{s}s pExEnx·^{s}ī'dē lāx ō'xtâ^{s}yas. Wä, lā'^{s}xaē hë'Em gwē'x·^{s}īdxa apsā'dza^{s}yas.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē g·ē'xaxēs qE'ndzayuwē. Wä, lē ax^{s}ē'dxēs xE'lẋwāła k·!ā'wayâ qa^{s}s aë'k·ē k·!ā'ẋ-^{s}wīdēq. Wä, g·î'l^{s}mēsē la â'lak·!āla tē'sēda sē'wayâxs la'ē ax^{s}ē'dxa wunā'gułē qa^{s}s k·!ā'ẋ^{s}wīdēq qa lē'x·Enēs, qa â'^{s}mēsē hë'ts!ē^{s}stEns a^{s}yasowē'x lā'qēxs q!wē'sāłasE^{s}waē. Wä, lē mō'dEnē wā's-

[squeezed]. The length of this is four finger-widths [when he cuts it off]. Then he cuts a hole in it which is two finger-widths and a half in length. First he drills it with a thick drill. The drill-holes are in two rows close together. As soon as he finishes drilling it, he takes a thin straight-bladed knife and cuts it out between the drill-holes. Then he cuts through, (making) a square hole. As soon as he has cut through, he takes the paddle and fits it to the cross-piece on top (see Fig. 118). Then he drills through the cross-piece (handle) on the top end of the paddle, and he nails it on with two pegs of yew-wood.

As soon as this is done, he takes really gummy pitch-wood of the spruce-tree, and oil of the perch, and he rubs (the oil) over the new hunting-paddle. As soon as it is greased all over with perch-oil, he lights the end of the pitch-wood in the fire of his house. As soon as it blazes up, he puts down the burning pitch-wood on the floor, takes the oiled paddle and places it close to the burning pitch-wood. Thus the paddle is blackened.

As soon as the paddle is really black, he stops; and when it gets cool, he takes a piece of old matting and rubs it down. Thus the black paint of the paddle never comes off. Then he puts it away.

Then the two paddles — the paddles of the porpoise-hunter — are finished. The paddle of the steersman is made in the same way. That is all about this.

gEmasasēxs la′ē k·!ī′mtts!EndEq. Wä, lē LE′xsōdxa yā′yūduẋ^udEnäläsa sEg·înō′-dza^syas wā′sgEmstE^swasas. Wä, hë′Em g·îl sE′lx·^sīdayâsēs ḷEkwē′ sE′lEm lāq. Wä, lē mEmk·ō′LElē sElā′^syas ma^sɬts!ā-gE^snā′kula. Wä, g·ī′l^smēsē gwāɬ sEla′-qēxs la′ē ax^sē′dxēs wī′ɬē ^snExx·ä′ɬa k·!ā′wayâ qa^ss k·!ēk·!ā′gōdālēxa sEla′^sē. Wä, laE′m hëx·sâ′lēda sō′xstowē LēxS-^sō′dēs. Wä, g·ī′l^smēsē ë′x·stōẋ^swīdExs la′ē ax^sē′dxa sē′wayuwē qa^ss bE′ng·aä-LElōdēsa gēxtâ′^sē lāq. Wä, lē sElx·-sō′dxa gēxtâ′^sē hë′x·sâla lāx ō′xtâ^syasa sē′wayuwē. Wä, lē ḷāp!ē′tsa ma^sɬts!a′qē L!ēL!E′mq!Ek·!En ḷā′bEm lāq.

Wä, g·ī′l^smēsē gwā′ɬExs la′ē ax^sē′dxa â′lä la tsE′nxwa bExō′tasa alē′wasē. Wä, hë′^smēsa ts!ē′k!wēsē. Wä, lē q!E′ltsEmdxa alō′masē alē′ẋ^usa^syas sē′-wayâ. Wä, g·ī′l^smēsē la ha^smE′lxaLE-lēda ts!ē′k!wēsaxs la′ē mē′x·bEndxa bExō′tē lā′xa lEgwī′ɬtsēs g·ō′kwē. Wä, g·ī′l^smēsē la x·ī′qElaxs la′ē g·ī′g·alīɬtsa x·ī′x·îqEla bExō′tExs la′ē ax^sē′dxa q!E′l-tsEmakwē sē′wayâ qa^ss mā′g·iLalē ā′axE-Lā′las lā′xa x·ī′x·îqEla bExō′ta. Wä, hë′^smis la q!wa^sx^usEm^snā′kulatsa sē′wa-yuwē.

Wä, g·ī′l^smēsē â′lak·!āla la q!wa′^sx^u-sEma sē′wayâxs la′ē gwā′ɬa. Wä, g·ī′l-^smēsē k·ō′ẋ^swīdExs la′ē ax^sē′dxa k·!ō′-p!â^sē k·!ā′k·!ōbāna qa^ss dzEg·îɬtsE′mdēs lā′xa sē′wayuwē. Wä, laE′m hëwä′xa lā′wäyēda q!wa^sx^usEma′^syasa sē′wayuwē. Wä, â′^smēsē la g·ē′xaq.

Wä, laE′m gwā′ɬa ma^sɬtsE′mē sē′sE-wayuwa, yî′xa alē′ẋ^usayuwē sē′wayâ. Wä, hë′^smisē sē′wayâs ḷE′nxḷa^syas, yîxs he′^smaaxat! gwē′x·sExs tē′saē. Wä, laE′m gwāɬ lā′xēq.

After the harpooneer's canoe is finished, water is poured into it, spruce-twigs are placed inside the canoe, and then red-hot stones are thrown in. This gives the canoe a good smell. Then it is sprinkled all over with the bailer. The harpooneer's mat, paddle, and harpoon are also put into this water.

This treatment of the canoe is described as follows: —

As soon as this is done,[1] the ends of young shoots of the spruce-tree are taken, and he steams them in a steaming-box. Then he takes two large buckets and draws fresh water, which he pours into the clean steaming-box, and he gathers stones for a fire on the beach. Then he takes the spruce, puts it into the water in the steaming-box, and he takes his tongs, picks up the red-hot stones with them, and puts them into the steaming-box. As soon as the water begins to boil, he puts more spruce into it; and when it has been boiling a long time, he dips out the boiling water and pours it into the small canoe. He also puts the boiled spruce into the canoe. As soon as it is all in, he takes his bailer and sprinkles the boiled spruce all over the inside of the small canoe. When the small canoe is all wet inside, he sprinkles the boiled spruce and its liquid over the outside of the small canoe.

As soon as this has been done, he leaves it for a little while and takes matting of his wife — a good mat — and puts it into the water in the small canoe, in the boiled spruce and its liquid; and also his knee-cover, namely his blanket, is generally also put into the water in the small canoe; for it

Wä, g·î'l^{s}mēsē gwā'łEXs[1] la'ē ax-ē'tsE^{s}wa ō'ba^{s}yasa alō'masē wī'łts!anasa alē'wasē. Wä, q!ō'łaq lā'xa q!ō'lats!ē; wä, hë'^{s}maaxs la'ē ax^{s}ē'dxēs ma^{s}łtsE'mē awâ' naE'ngats!a qa^{s}s lē tsä'xa ^{s}wE^{s}wa'-p!Emē qa^{s}s lē guxts!ō'ts lā'xa ë'g·îg·a q!ō'lats!ä. Wä, lē xE^{s}x^{u}LE'ntsa t!ē'sEmē lā'xa lEgwī'sē. Wä, lē ax^{s}ē'dxa alē'-wasē qa^{s}s xE^{s}stE'ndēs lā'xa ^{s}wā'bEts!â-wasa q!ō'lats!ē. Wä, lē ax^{s}ē'dxēs k·!îpLā'la qa^{s}s k·!îp!ē'dēs lā'xa x·ī'x·îx-sEmāla t!ē'sEma qa^{s}s lē k·!îpts!ō'dālas lā'xa q!ō'lats!ē. Wä, g·î'l^{s}mēsē maE'm-dElkulē ^{s}wā'pasēxs la'ē ē't!ēd xE^{s}stE'ntsa alē'wasē lāq. Wä, g·î'l^{s}mēsē lē gē'g·îł-tsēla maE'mdEqula ^{s}wā'pa qa^{s}s gux^{s}ā'-łEXsElēs lā'xa x̣wā'x̣wagumē. Wä, laEm^{s}xaā'wisa L!ō'pē alē'was lāx ō'xsasa x̣wā'k!una. Wä, g·î'l^{s}mēsē ^{s}wī'łg·a-ałEXsEXs la'ē ax^{s}ē'dxēs tsä'layuwē qa^{s}s xō'ts!EłEXsElēsa L!ō'pē alē'wasē lāx ha-mE'lgExasas ō'xsasa x̣wā'x̣wagumē. Wä, g·î'l^{s}mēsē ^{s}nā'x̣wa k!u'nqē ō'xsasa x̣wā'x̣wagumaxs la'ē xō'dzEłtsEmēxa ō'sgEma^{s}yasa x̣wā'x̣wagumasa L!ō'pē alē'wasa Lę^{s}wēs ^{s}wā'pala.

Wä, g·î'l^{s}mēsē gwā'łExs la'ē yā'was^{s}īd bâs qa^{s}s ax^{s}ē'dēx k·!Etā'^{s}yasēs gEnE'mē, ëx· łē'^{s}wa^{s}ya qa^{s}s lē ax^{s}stē'ndēs lā'xa tō'xsasa x̣wā'x̣wagumē lā'xa L!ō'pē alē'wasa Lę^{s}wīs ^{s}wā'pāla. Wä, hë'^{s}misēs ^{s}nā'kwax·a^{s}ē, yîx ^{s}nEx̣^{s}unā'^{s}yas q!unā'la ax^{s}stā'nō ō'gwaqa lā'xa tō'xsasa x̣wā'-x̣wagumē, qaxs ^{s}nē'x·sE^{s}waēda k·!ō'lōt!ē

[1] Namely, fitting up the canoe.

is said the porpoise likes the smell of the boiled spruce, and therefore the porpoise-hunters do this to their hunting-canoes and to their things with spruce.

ax^{s}ē′xsdEx gwē′p!ālasasa ɪ.!ō′pē alē′wasa. Hë′Em lā′g·ila hë gwē′g·ilēda ēs^{s}alē′winoxwaxēs alē′wats!ē ẋwā′ẋwagumа ɫE^{s}wīs gwē′ɫgwäla lā′xa alē′wasē.

When the canoe is made ready for the hunting-season, its outer side is dried carefully, so that all the small splints turn outward. These are burned off with torches, which are afterwards moved once more slowly over the whole surface of the canoe until a layer of charcoal shows on the outside. Then the canoe is turned over and allowed to cool. When it is cold, it is rubbed down at right angles to the medial line. When it is quite smooth, the outside up to the water-line is smeared with tallow. Olachen-oil is not used for this purpose, on account of its odor. After this the bottom of the canoe is struck with spruce-branches to give it a good smell.

The canoe must never rest on the ground, that the surface may not get rough. It is always carried, never pushed along over stones. It must rest so high that a person can sit under the bow, and lift it on his shoulder. The hunter carries in his canoe two round cedar-sticks, about 10 cm. in diameter and a metre long. When a landing is made during ebb-tide, the stern is brought ashore first. The poles are then placed under the canoe to protect the bottom from the pebbles of the beach.

When the hunters make ready to start, they put on their capes of shredded cedar-bark. Pieces of split kelp are put upon the ends of the thwarts near the side of the canoe, and are turned up over the gunwale. The paddle, when not in use, is placed on these; and the kelp deadens the noise when it is put down, lifted, or when it happens to strike the gunwale.

When the harpooneer goes aboard, he pushes off the canoe with the handle of the paddle, not with the point. He puts down the harpoon with the point directed towards the middle of the canoe, and attaches the harpoon-points, making the line as tight as possible. Then he puts the line into the bow of the canoe, laying it in long turns, which are placed side by side. He counts off the middle of the coils before they are undone, and at this place he ties the bladder, which is first moistened by being immersed four times in the water. Then the rest of the line is put down in the same manner, and finally its end is tied to the short harpoon-line. After this the loop through which the harpoon-line runs is attached to the spear-shaft. Then the harpoon-shaft is turned point forward. To the butt-end a loop or a stout bone is tied, which is held when the harpoon is cast.

I insert here a description of the disposition of the harpoon and line: —

This is where the hunter puts his harpoon-line and the bladder;[1] and

Wä, hë′Em g·ä′ɬaats q!E′lkwasa alē′wīnoxwē ɫE^{s}wis pō′ẋunsē.[1] Wä, hë′Em

[1] In the bow of the canoe, just aft of the mast-thwart.

this is where the porpoise-hunter sits[1] when he goes after a porpoise that has been heard spouting; and this is where he sits before he has heard a porpoise spouting, and while he is paddling;[2] and this is where he coils up his harpoon-line and his bladder when he makes it ready in his canoe;[3] for the only time when the harpoon-line and the bladder are (behind the mast-thwart) is when he is starting from the beach; and he puts them (in the very bow of the canoe) when he gets out to sea, where he expects the porpoise.

k!wā'ɬaatsa alē'wīnoxwaxs la'ē hē'ɬēxēs la wuɬā'x^{s}ɬeɬ ɬā'^{s}lāla k·!ō'lōt!a. Wä, hë'^{s}mis k!wā'xdzatsē yîxs k·!ē's^{s}maē wuɬā'x^{s}aLElaxa ɬā'^{s}lāläxs sē'ẋwaē. Wä, hë'^{s}mis lā qEs^{s}ā'ɬExdzasxēs q!E'lkwē ɬE^{s}wis pō'ẋunsē, yîxs la'ē hë'ɬ^{s}aɬE'xsaq, qaxs lē'x·a^{s}maē hë'x·dEms lē'da q!E'lkwē ɬE^{s}wa pō'ẋunsē naxs (?) hë'^{s}maē ā'ɬē alē'ẋ^{s}wīd lā'xa L!Emā'isē. Wä, ā'ɬmēs lās lā'xa ō'g·iwa^{s}ē lā'xa L!ā'sEkwē lā'xēs lā nā'k·!Ex·^{s}īdaasxa k·!ō'lōt!ē.

At another place the disposition of harpoon and line was described to me as follows: —

And he puts his harpoon-line and the barbed points into the canoe-box (see Fig. 122), and he puts the canoe-box into the bow of the canoe, in front of the hunter's seat, and there he coils up the harpoon-line. He puts down the bladder above it, in the bow of the canoe, and he also takes kelp and measures the length of the thwart next to the mast-thwart where he is sitting in the middle, and he cuts it off the same length as the thwart. Then he slits open one side of it, and he puts it over the edge of the thwart towards the bow of the canoe. That is where he puts down his paddle when he harpoons the porpoise. I think that is all I know about it.

Wä, hë'^{s}mis g·its!â' lā'xa ō'dzaxsa q!E'lkwē ɬE^{s}wa LELE'g·îkwa. Wä, la hë hants!â'ɬg·iwa^{s}ya ō'dzaxsē nalī'ɬExsas k!wā'xdzasasa alē'wīnoxwē. Wä, hë'^{s}mis la q!E'lx·sEmīɬExtsōsa q!E'lkwa. Wä, hë't!a ^{s}mEgu'xsa pō'ẋunsē ë'k·!ēɬExsa lā'xa â'g·iwa^{s}ē. Wä, hë'^{s}mis ax^{s}ē'tsō^{s}sa wā'wadē qa^{s}s ^{s}mE'ns^{s}īdēq lāx wā'sgEmasas ɬEx·Egap!a^{s}yas k!wā'k·!înēsE^{s}was kwawō'yâ. Wä, lē t!ō'ts!Endqēxs la'ē ^{s}nEmā'sgEm ɬE^{s}wa ɬEx·Exsē'. Wä, lē kwagEnō'dzEndEq qa^{s}s qEpk·!ō't!Endēs lā'xa ^{s}nE'lk·!ōt!Ena^{s}yasa ɬEx·Exsē'. Wä, hë'Em k·ā'datsa sē'wayōwaxs la'ē sā'yak·!axa k·!ō'lōt!ē. Wä, lax·st!aak^{us}Em ^{s}wī'^{s}lEn q!ā'ɬē lā'xēq.

The canoe is manned by the harpooneer and his steersman. The latter sits on the port side, while the harpooneer paddles on the starboard side. The harpoon lies on the knees of the harpooneer, who sits so that there is

[1] On the mast-thwart.
[2] Just in front of the mast-thwart.
[3] In the very bow of the canoe.

room enough on his right to push down the paddle quickly. Both are as quiet as possible, because the ear of the porpoise is very keen, and it is scared away by the slightest noise. Hunters communicate by signs. They paddle with deep strokes, and throw the paddle rapidly in a wide circle through the air, letting the water drip off in a fine spray far away from the canoe and without noise. When the porpoise comes up on the port side, the harpooneer paddles, and the steersman steers to port by holding his paddle in the water so that the canoe swings around slowly and without noise. Only when the canoe is headed right does the steersman begin to paddle. The harpooneer directs the steersman by inclining his head in the direction that he wants to take. The porpoise must be ahead and a little to the left to enable him to hit it.

When about twelve metres away from the porpoise, he shakes the canoe by a jerk of his legs, puts down his paddle, rises, and stands with the right knee bent. Just before casting the harpoon he raises himself to full height. The harpoon is always held first a little towards the right, because otherwise the porpoise would see it. He tries to cast the harpoon when the porpoise is just under the surface of the water, swimming straight ahead. Otherwise it will hear the harpoon and turn at once. When the harpoon is cast, it is held so that the longer point is below. After being thrown, it turns around, and generally the shorter point hits the animal. As soon as the harpoon has been cast, the harpooneer sits down and steps firmly on the bone at the end of his line. The line runs out quickly, and soon the bladder falls overboard. Then he signals his steersman to back-water by pointing the palm of his hand backwards; and at the same time he must take the direction of a point of land, in order to be able to find again the place where the porpoise dived. Generally the porpoise rises again at exactly the same place where it went down, and for this reason the canoe is backed away. When the porpoise dives, the line is paid out; and when the canoe is far enough away, the harpooneer gives a jerk downward, which is a signal for the steersman to stop. The porpoise generally comes up so quickly that it reaches the surface before the float comes up which is attached to the middle of the harpoon-line. As soon as the porpoise emerges, the harpooneer shakes the canoe again as a signal for the steersman to paddle ahead. Porpoises, when wounded, always swim about in a circle. The harpoon-shaft glides back along the line until it reaches the bladder. The hunters paddle up to the bladder, and the harpoon-shaft is disengaged and is put down in the bow of the canoe. Then the harpooneer begins to haul in the line outside of the canoe, letting it fall back into the water. When the canoe comes near to the porpoise, he lets go of the line, and both men paddle, bringing the quarry to the left of the canoe. Then he stabs it with the harpoon-shaft either just behind the head or between the ribs. The stick often goes right through the body and

pierces the lungs. When the animal has received a deadly wound, it swims along in short jumps, and the steersman has to paddle backward, for just before it dies it causes a whirl of the waters. Females generally drift for some time, while males sink at once.

As soon as (the harpoon-points) enter the porpoise, they come off from the ends of the prongs, and the harpoon-shaft comes sliding along the harpoon-line until it reaches the bladder in the middle of the harpoon-line. That is where the hunter takes hold of his harpoon-shaft and unties the ends of the guide-loop at the neck; and he throws the bladder into the water; and he puts the harpoon in the bow of the small hunting-canoe, placing the finger-holes on his right knee. Then he takes up his hunting-paddle.

Then he paddles after the porpoise which drags the harpoon-line, going to the right side. As soon as he approaches it, he puts down his paddle on the right-hand side of the canoe, behind his seat. He grasps the harpoon-shaft at the finger-holes with his right hand, and holds it with his left hand (a little beyond the small of the back of the harpoon). Then he stabs it with the prongs, harpooning it behind the fins. Sometimes the porpoise dies right off when he hits its lungs.

As soon as it is dead, he puts his fingers into the blow-holes and pushes it down under water. Then he pulls it up and into his small hunting-canoe. Then he takes the harpoon end of his harpoon-points and twists them when he pulls them out. Then he washes them, so that the blood comes off, and he puts them back on the prongs of his harpoon-shaft, and then he listens

Wä, g·î′l^{s}mēsē lā′bɛta lā′xa k·!ō′lō-t!axs la′ē lawä′ lā′xa ō′ba^{s}yasa dzēdzē′-gumē qa^{s}s g·ā′xē k·!ē′xułɛna^{s}ya mā′-stowē lā′xa q!ɛ′lkwē qa^{s}s g·ā′xē k·!ā′-xalɛla lā′xa pō′χunsē lāx ^{s}nɛgō′yâ^{s}yasa q!ɛ′lkwē. Wä, hë′^{s}mis la dā′x·^{s}īdaatsa alē′winoxwaxēs mā′stowē qa^{s}s qwē′l^{s}īdē ō′ba^{s}yasa t!ama′k·!ɛxawa^{s}ē. Wä, lē ts!ɛx^{s}stɛ′ndxa pō′χunsē qa k·a′dɛg·ɛyō-dēsa mā′stowē lāx â′g·iwa^{s}yasēs alē′-watst!ē χwā′χwaguma. Wä, lē k·a′t-k·äx·a^{s}ē xa′bats!ɛxsda^{s}yas hë′łk·ōtk·ä-x·a^{s}yasēxs la′ē dā′x·^{s}īdxēs alē′χ^{u}sayuwē sē′wayâ.

Wä, lē sā′sɛyōχ^{s}wīdxa la dō′χ^{u}sɛm-lɛxa q!ɛ′lkwē k·!ō′lōt!a lāx hë′łk·!ōdɛnō-dza^{s}yas. Wä, g·î′l^{s}mēsē ^{s}nɛχwā′x·^{s}īd lā′qēxs la′ē k·ā′t!ałɛxsasēs sē′wayuwē lāx hë′łk·!ōtägа^{s}yasa χwā′k!una lā′xē gwaa′p!ēłɛxsaxs la′ē xapstō′dɛx xā′ba-ts!ɛxsda^{s}yasēs mā′stowē, yîsēs hë′łk·!ō-ts!āna^{s}ē. Wä, lē dā′łasēs gɛ′mxōł-ts!āna^{s}ē lāx (awā′gōxḷäsa mā′stowē). Wä, laɛ′m dzē′gwaxsōdɛxs la′ē tsē′xaxs la′ē sɛx·^{s}ī′dɛx gu′nxa^{s}yas gɛ′lq!ayâs. Wä, lē ^{s}nał^{s}nɛ′mp!ɛna hëbē′xs la′ē łɛ^{s}la′ k·!ō′lōt!äxs la′ē q!abɛkwē′s kwa′χwa.

Wä, g·î′l^{s}mēsē łɛ^{s}laxs la′ē gɛlxstō′-dɛx k·ɛwā′sasēxs la′ē wē′gunsaq lā′xa dɛ′msx·äxs la′ē nē′xōstōdɛq qa^{s}s nēx-^{s}ā′łɛxsēq lā′xēs alē′wasɛlɛla χwā′χwa-guma. Wä, lē dā′x·^{s}īdɛx mä′ts!ɛxḷäsēs lɛg·ɛkwē′ qa^{s}s sɛ′lx^{s}wīdēqēxs la′ē nē′-xōdɛq. Wä, lē ts!ō′χ^{s}wīdɛq qa lawä′-yēsa ɛ′lkwa. Wä, lē χwē′laqa axbɛ′nts lāx dzēdzē′gumasēs mā′stowē. Wä, lē χwē′laqa hē′łēx·^{s}īdxa k·!ō′lot!ē. Wä,

again for porpoises. As soon as he has four porpoises, he goes home.

g·î'l^{g}mēsē mō'sgEma k·!ō'lōt!ē alē'wā-nEmsēxs la'ē nä'^{g}nak^{u} lā'xēs g·ō'kwē.

The white (?) porpoises, which go in shoals, are hunted at night. They do not dive after they have been hit. Since they are very large and active, the hunter selects a small one, which he harpoons. When holding on to the line, he stems his feet against the thwarts, and throws himself backward in the middle of the canoe. Sometimes the bailer is tied to the line as a drag. If this is not enough to decrease the rapidity of the movements of the animal, a mat is rolled up and tied to the line. If this is still insufficient, paddles and even the mast of the canoe may be used as drags.

Generally a number of harpooneers go hunting together. The one who proposes the hunt gets a seal or a small porpoise, and invites the other hunters to a feast, during which they agree upon the place and time of the proposed expedition. Generally they start on the evening following the feast. They do not eat before starting, and take no provisions along, but fast from the close of the feast until their return from the hunt. They keep, however, certain plants, wīwomaxLawē^{g}, k·!î'lk·!as ("tongue-on-ground"), or bark of spruce-root, in the mouth, in order to have a pure breath.

The principal places where the Fort Rupert tribes hunt porpoise are the following. The place where they generally go is Q!uk·!îxstē, a place where there is a large eddy. Other places are Me^{g}lē's, Ëk·!îx·ō'ls, XEk!u'ms (west of Duncan Island), Lā'qEkwā'wē^{g} (west of Miles Cone), G·îlsg·î'ltEm, Łe'nxEsba (Christie Passage). In all these places are eddies frequented by porpoises. The people of Newettee are allowed to hunt at all these places also.

When the harpooneers go out together, they keep time paddling. When they discover a porpoise, they spread out in a circle to prevent the escape of the animal. If a man thinks that he has a chance to hit it, he gives a signal indicating that he intends to make a start. Then all the others stop, ready to cast their harpoons if the porpoise should come up near their canoes. Whoever gets the first animal must distribute it among all the others. He goes ashore at once to prepare the meat for a feast.

Dog-fish are caught in the following manner. A piece of salmon is tied around a stick and let down into the water. Gradually it is pulled up until the dog-fish, which are attracted by the bait, are near the surface. Then the fish are simply taken by the tail and thrown into the canoe. Sometimes they are stabbed with poles without point.

Herring-Rake. Herring are caught with a rake consisting of a long flat pole, in the narrow end of which a large number of teeth, formerly made of bone, but more recently made of nails, are inserted (Fig. 159). The rake is made of red-pine wood. A piece about two fathoms long is split off from the standing tree, as described before (p. 328). Chips are placed by the side

of the tree, which break the fall of the piece split off. The latter is then split with wedges into two equal parts, so that the line of division forms the radius dividing into two halves the segment that has been cut off from the tree. Then a piece a little more than one finger thick is split off from this radial surface. This strip of wood is then whittled down and smoothed. The teeth of the rake are made of the tibia or ulna of a deer, which is broken up into splints by being hammered lightly at one end until it begins to crack. Then the crack is followed up with the hammer until the bone is broken up. The teeth of the rake are three finger-widths in length. They are rubbed down and sharpened on gritstone. The teeth are inserted in the handle in the following manner. The long piece of wood which is to form the rake is put down on the floor of the house edgewise, being held on each side by two stakes. Then drill-holes are made about two finger-widths apart along the edge of the rake, and the teeth are driven in by means of a piece of yew-wood. Then for four nights the rake is smoked over the fire, and every morning it is rubbed down with deer-tallow to make it brittle and so as to make the soot adhere to it.

Fig. 159 ($\frac{1}{11}$). Herring-Rake. Nootka. Length, 370 cm.

The herring begin to run about the first week of March. When catching herring, the fisherman's wife sits in the bow of the canoe, facing the stern; while the fisherman takes his position in the stern, also facing aft. The woman steers and paddles the canoe, which moves stern foremost. The man paddles on the left-hand side of the canoe until the herring are reached. Then he puts down the paddle, takes up the herring-rake, and draws it towards himself along the right-hand side of the canoe with the same motion which is used in paddling. Then the fish that are caught on the points of the rake are shaken off and dropped into the canoe. The fishermen claim that it is very difficult to lift more than eight fish at a time, and that when there are more on the rake, they drop them back into the water.

When a fisherman has to go out alone, he weights the bow of the canoe down with stones, so that it draws more water at the bow than at the stern. Then he paddles forward to where the herring are, and rakes them in in the same way as described before.

Herring also come to the shore during the months of December and January. The arrival of a shoal of herring is recognized by the eagles flocking towards the sea and picking up the fish. At these times the herring are generally driven up by the black cod and other large fish,

and swim about near the surface in circles. At this time the fish are either caught with the herring-rake or are simply dipped up in baskets.

Sealing. — Seals have sleeping-places, which they use according to the state of the tide. Near Fort Rupert there are three on Deer Island, two on Little Island (X̣wē′gats!ē) just outside of Deer Island, three on Dɛ′mxadē, one on Peel Island, two on Mā′k·awīlē^{s}. The one at the north end of the last-named island is used by seals at low water; the one at the west end, at high water. The seal-hunter and his steersman go cautiously to the nearest point of land, then the harpooneer gives a signal to the steersman to paddle quickly. When he gets near enough, he harpoons the largest seal that he discovers, and hauls in his line as quickly as possible. He tries to get the seal under the bow of the canoe. The seals turn about so often and so quickly, that unless the line is hauled in rapidly, it gets many kinks. Therefore the harpooneer tries to hold it tight. When the seal comes up to breathe, he tries to frighten it down again, so as to drown it. Finally, when it comes up near the canoe, he strikes it on the head, and thus kills it.

Hunters use a call for seal, which is a guttural sound produced by a rapid expulsion of the breath through the glottis, the mouth being closed. In olden times seal-nets made of cedar-withes were used, but no detailed information in regard to them could be obtained.

Sea-lions are killed while basking on rocks. The hunters try to approach them unobserved, and strike them down with a heavy club about a fathom long. They try to hit them first on the occiput, then between the eyes. Sea-lion meat is hardly ever eaten, but the hide is used for making thongs and wedge-bags. The bristles are used as ornaments. These are sometimes obtained in the following manner. On many sea-lion rocks are small hollows into which the dung is washed. They are called kwä′tsē ("chamber-vessel"). This puddle is washed out and filled with hemlock-branches which are attached to long poles. The sea-lions wallow in this hole, and some of their bristles are caught in the hemlock-branches.

Like the porpoise-hunters, sea-otter hunters go out together. They wear their blankets pinned up over the right shoulder, the right arm being naked. Hemlock-twigs are tied in their hair, or a bone or an arrow is pushed through the hair crosswise. When shooting, they have one arrow ready in the mouth, while the other is on the string. The steersman sits very high, that he may be able to see.

IX. — HUNTING LAND-MAMMALS AND BIRDS.

The principal method of hunting land-mammals is by means of traps. Bow and arrow and spear are not used extensively for this purpose.

Traps. — For deadfalls three principles of release are in use. Most of them have the release shown in Figs. 160, 161, and 163, while the release shown in Fig. 162 is rare. The first type of release consists of a pole (*c*) supporting a lever (*d*), which is connected by a thin withe (*e*) with a trigger (*f*). In baited traps (tēlk^{u}) the bait is attached to the trigger, which thus serves at the same time as bait-stick (tē′layū). In the unbaited traps the trigger is set free by the animal when it steps on a board or pulls on a string (Fig. 163, *l*). As shown in the illustrations, the trigger is held lightly in two notches of a forked branch, and the movements of the animal pull it out of the notches. The short end of the lever *d* is connected by a heavy ring of cedar-bark (*n*) with the beam (*i*) which forms the deadfall.

Fig. 160 ($\frac{16}{125}$). Deadfall for Bear and Small Animals.

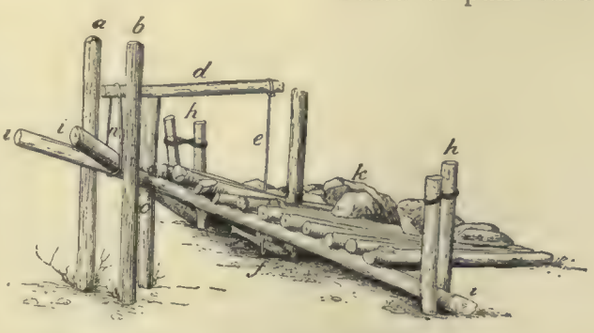


Fig. 161 ($\frac{16}{262}$). Double Deadfall for Small Animals.

The second form of release is shown in Fig. 164. In this trap the lever *d* served at the same time as a trigger. The withe *n*, which connects its short end with the beam of the deadfall, is bent over the support *c*, which rests on the two posts *a* and *b*. The ring is so twisted that the

lever *d*, when released, turns with its long end forward (in the position shown in the illustration). By its pressure it holds the trigger *f* in position.

Fig. 162 ($\frac{16}{25}$). Deadfall with Post-Release.

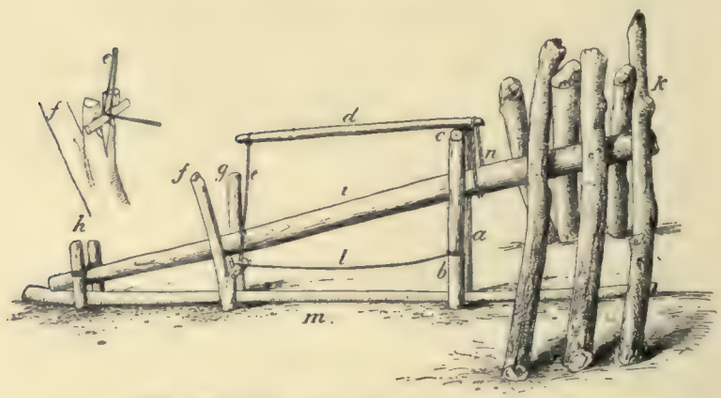


Fig. 163 ($\frac{16}{23}$). Deadfall with String-Release.

Fig. 164 ($\frac{16}{27}$). Deadfall for Beaver.

As soon as the animal steps on the trigger *f*, the trigger slips down, thus releasing the lever *d*, and with it the deadfall *i*.

Another form of release is shown in Fig. 162. Here the deadfall is

supported by a small post (*d*), which rests on a trigger (*f*). The lower part of the post *d* is rounded, and the slightest movement of the trigger *f* causes it to slip down. The end of *f* is baited; and when the bait on *f* is touched, the supporting post *d* gives way.

The deadfalls are either heavy roofs which fall down upon the animal and crush it, or they consist of a single beam which strikes a base beam. The animal is either strangled or crushed between these two heavy poles. The most common forms of the deadfall consisting of a roof are shown in Figs. 160 and 161. The first of these has the bait suspended close to one side, and it is closed by a fence (*o*), which prevents the escape of the animal towards the side. In the illustration that portion of the roof situated just over the bait is shown cut out, in order to make the arrangement of the bait visible. The lever of this trap is supported on a post, and holds up the beam *i* in the same way as shown in Fig. 161. This trap is used for both small and large animals. When it is used for bears, the bait is always placed on the side to the left from the entrance to the trap, because the bear, it is said, always takes the bait with its right paw, which puts it in a more unfavorable position to release itself. If the fence were at the right side of the bear, it would have a better chance to break through and thus make its escape. For smaller animals this trap is often doubled, as shown in Fig. 161. It will readily be seen that the trap there represented consists of two symmetrical halves, each like Fig. 160, placed side by side, so that the bait is in the middle. Its name (wā′xsanâyaak^{u} tēlk^{u} k·!ɛ′lg·ayu) indicates that it is considered by the natives as a doubled trap. Sometimes it has a bottom beam on which the animal is crushed, while in other cases the weight of the roof alone is sufficient to crush it on the ground. All these traps are put up by the sides of the trails of the animals. The baited trap Fig. 160, when used for minks, has the following measurements: the lever *d* is one finger long when the animal is to be strangled; it is made one span and four fingers long when the trap is to crush its abdomen. The falling beam *i* is made four spans long. The height of the beam *i* where it leans against the post *b* is the height of the fist.

When intended for raccoon, the beam *i*, where it crosses the post *b*, is one span high. When the chest is to be crushed, the lever is made one span and four finger-widths long; when the abdomen is to be crushed, one long span and one short span long. The weight placed on the roof is about seventy-five pounds.

The same trap, when used for bears, is of the following sizes. The bottom beam *m* is about 15 cm. thick, a tree as straight as possible being selected. It is about two fathoms long. The falling beam *i* has the same thickness. The posts are also about 15 cm. in diameter. At the place where the falling beam *i* crosses the post *b*, its height is the same as the shoulder

of a squatting man. The lever has the length of an arm from the point of the fingers to the shoulder. It is made of hemlock, which does not bend easily. The roof is made of trees about 20 cm. in diameter, split in halves. They are a little over a fathom in length. Very often there are two pairs of guide-beams (*h*) instead of a single pair. These, as well as the posts *a* and *b*, are often tied together on top with cedar-withes at such a distance that the beam *i* will fall down easily, but will strike exactly on top of the bottom beam *m*. The bait used for the bear-trap consists of one male and one female salmon. The salmon-roe is broken up and scattered all round the trap. The salmon is put on the bait-stick, which is made of yew, by pushing the stick through the body of the fish close to the backbone. A loop of cedar-twigs is put around the tail, and cedar-withes are pulled through the eyes. With these the bait is tied to the bait-stick. The use of the trap shown in Fig. 163 is easily understood from the illustration. It is called "trap with release-line" (dō'gwîlkᵘ). The bottom beam *m* and the release-string are carefully covered, so that they are invisible, and the whole trap is put up in the trail of the animal that is to be caught. The falling beam appears like a fallen log. The release-string *l* is made of spruce-root, and is drawn very tight. In many cases the trap has two such release-strings, — one running to the post *a*; the other to the post *b*. In running along, the animal is sure to pull one of these two strings. The rule in making a bear-trap of this kind is to make the release-string *l* so tight that when it is pulled with the finger, it can be pulled up to a point three finger-widths from the falling beam and three finger-widths from the bottom beam. This type of trap is used also for land-otters, for which a single and very tight release-string is used. The falling beam, where it crosses the posts *a* and *b*, is one span high, while the distance between *f* and *b* is three spans. These traps are put up preferably next to a tree, in order to make sure that the animal will not go around it. Often the lower end between *h* and *f* is also weighted with logs and stones.

The trap shown in Fig. 164 is set up in the water, and used for beavers. When the beaver swims along and comes to the tree *b*, it tries to crawl across it; and when it touches the release *f*, the falling beam comes down. For catching swimming beavers a net is sometimes placed between *f* and *b*, closing the whole opening between the surface of the water and the bottom beam. The net, which is made of spruce-root, is set so loosely, that when the beaver strikes it, it pulls out the trigger, as in Fig. 163, thus releasing the falling beam.

Spring-traps are also used for catching bear, deer, and for small animals as well. These are also partly baited, partly used without bait. The methods of release are about the same as those of the deadfalls. In the spring-trap (x̣wē'dayu) shown in Fig. 165 a tree is bent over, and is held in position by means of a rope made of twisted cedar-twigs, which is pulled over the branched

stake. The loop by means of which this rope is attached is baited, and a noose lies just under the bait. As soon as the animal pulls at the bait, the loop is released, and the elasticity of the tree throws up the noose, which catches either the foot of the animal, or, more frequently, its neck.

Fig. 165 ($\frac{1}{12}\frac{6}{5}$). Spring-Trap.

The type of trap shown in Fig. 166 is commonly used for catching deer. The release is about the same as that of the beaver-trap before described. When the deer steps on the small platform made of sticks, it pushes down the lower one of the two horizontal poles. Thus the trigger is released; the tree, which is bent over, snaps back; and the leg or neck of the animal is caught and held in the noose.

The release in the trap shown in Fig. 167 is even more simple. Here a heavy tree is placed over a forked support, the heavy end being held up by a long pole, which is put under it in such a way that the least movement of the opposite end throws the beam off from its support. As soon as the animal tugs at the bait, the beam is thus released, and it is thrown up.

Fig. 166 ($\frac{1}{12}\frac{6}{5}$). Spring-Trap.

All the nooses are made of twisted cedar-twigs, while the stakes of the traps are made of hemlock. For both spring-traps and deadfalls, fences made of bushes are used (ʟ!ā'yaqîk^{u}), which lead the animal towards the trap.

Deer are also clubbed. The hunters bend down branches of willows or cedars near the water, and some of them hide at these places. When the deer come along and browse, a number of drivers imitate the howling of

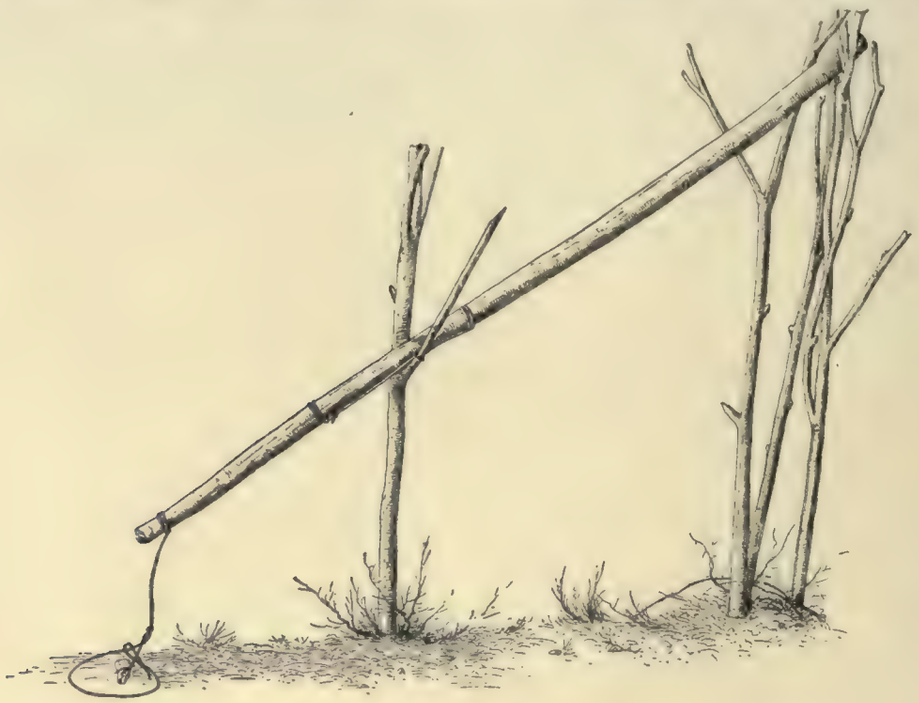


Fig. 167 ($\frac{16}{1284}$). Spring-Trap for Deer.

wolves in the woods. Then the deer take to the water, where they are clubbed. Deer-meat is not eaten, because the Kwakiutl believe that it makes one forgetful.

Bow and Arrows. — The method of making the bow has been described before (p. 331). The length of the bow is from the tip of the finger of the

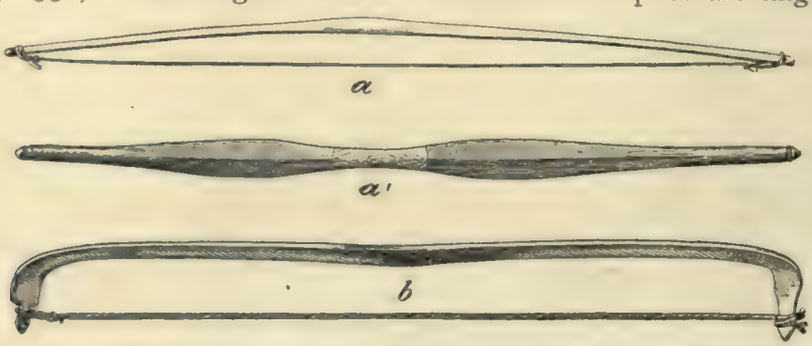


Fig. 168 *a* ($\frac{16}{1180}$), *b* ($\frac{16}{1180}$). Bows. Length, 114 cm., 101 cm.

left hand to the bend of the right elbow. The bowstring is made of twisted deer-skin or bear-guts. In olden times all bows had turned tips (Fig. 168, *b*),

but in later times straight flat bows were much used. These were originally characteristic of the tribes on the west coast of Vancouver Island, whose bows are narrow at the tips and wide in the middle, while the Kwakiutl bow has a round grip and is wide and flat near each end. The back is sometimes slightly keeled. The bows of the west coast sometimes have a number of ribs all along the belly, while those of the Kwakiutl are smooth.

The arrows are made of red cedar. The shaft is three spans in length. Arrows for hunting small game (Fig. 169, *e*) have straight or barbed bone or wooden points. All sea-otter arrows have barbed points (Fig. 169, *c*, *d*). The specimens in the collection of the Museum, all of which were recently made, have a point consisting of a flat bone, which is inserted in the end of the shaft. The splice is wrapped with spruce-root, and the whole joint is then

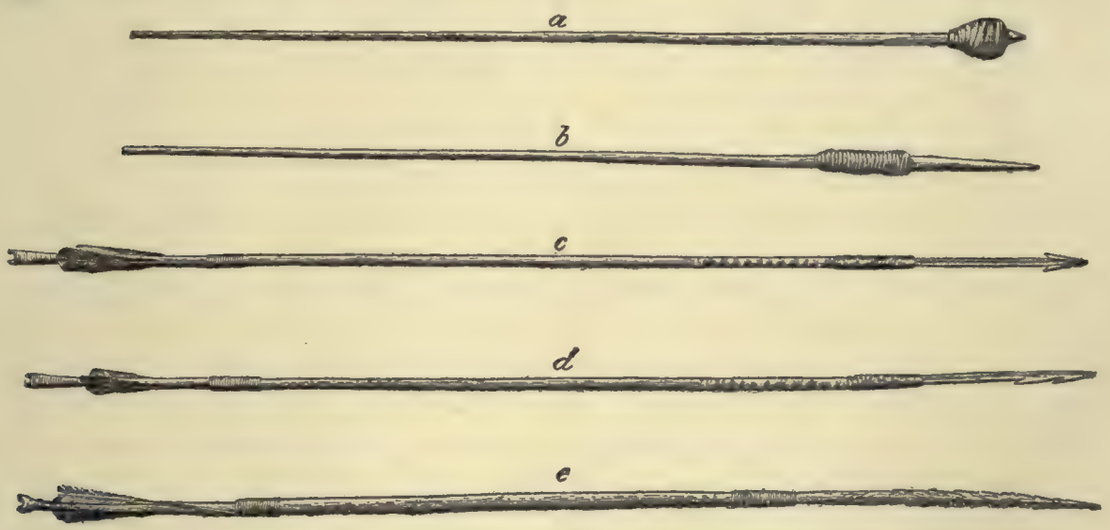


Fig. 169. Arrows. *a*, Bird-arrow; *c*, *d*, Sea-otter arrows (length, 80 cm.). *a* ($\frac{16}{21}$ b), *b* ($\frac{16}{21}$ c), *c* ($\frac{16}{8}$ d), *d* ($\frac{16}{8}$ c), *e* ($\frac{16}{21}$ c).

gummed over. I do not know whether these actually represent the old type of sea-otter arrows. The barbed arrows of the tribes of the northern coast of British Columbia, which have their barbs also on one side only, all have detachable points, which are held to the shaft by a thin line. In Fig. 169, *a* and *b* represent two small bird-arrows. These are made entirely of cedar-wood. Instead of the blunt end, which is commonly used by all the neighboring tribes, the point of this arrow is wrapped with a kelp line, which in one specimen forms a thick end, while in the other specimen it simply serves to weight the tip. The arrow is winged with two feathers, preferably cormorant-feathers, the quill of which is split and scraped. When tying on the feather, a wrapping is first applied to the nock of the arrow by pulling a piece of spruce-root through the nock and then wrapping from the nock up. At a

place 3 cm. from the nock the feather is inserted, which is laid so that its tip is directed towards the point of the arrow. Then the wrapping continues for about 2 cm. more, and the end of the wrapping is tucked under the last turn. Then the feather is turned over towards the tip of the arrow and laid along the shaft, without quite touching it, however. Then the quill-end is wrapped with spruce-roots, and is thus held to the shaft. The place where the quill-end is tied is not quite in line with the tip of the feather, which is thus given a slight turn.

Arrows are marked by being wound spirally with cedar-bark, and then

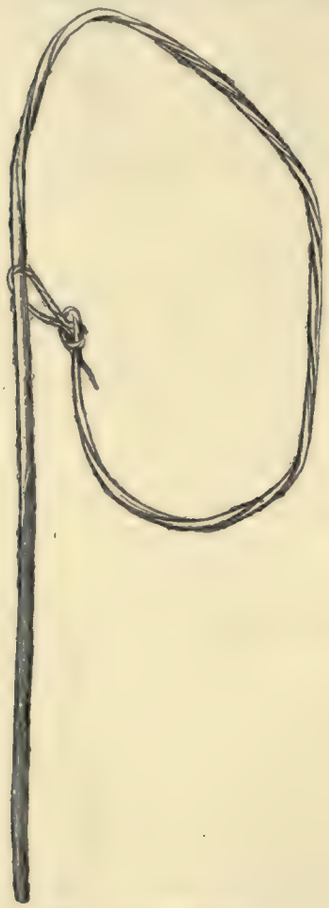


Fig. 170 ($\frac{1}{5}\frac{6}{16}$). Lasso.

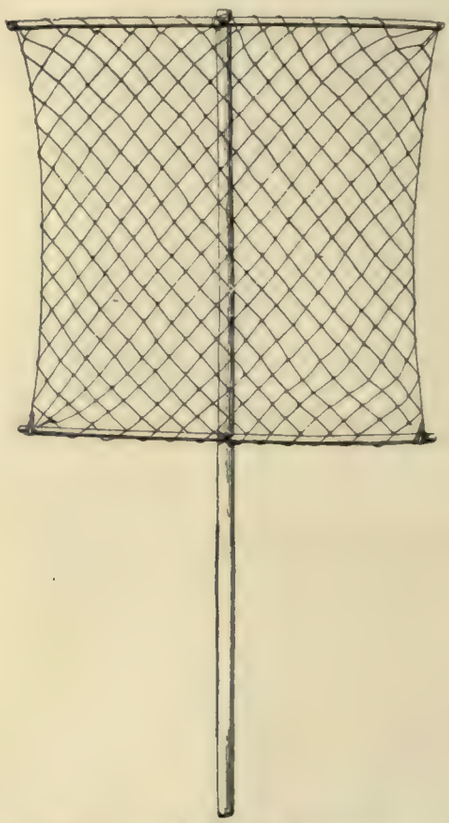


Fig. 171 ($\frac{1}{12}\frac{6}{11}$). Model of Goose-Net.

slightly burned, so that the covered places appear white on a dark background. Each man uses a definite number of turns, which thus serve as property-marks. Sometimes bits of quill wedged into the shaft near the point-end serve the same purpose. It is said that bone points were also provided with property-marks, but I have not seen any of these.

Bow and arrows were carried in wooden boxes. One of these in the

Museum is made of two pieces of cedar-wood. The whole box is 130 cm. long, 8 cm. wide, and 6 cm. high. The box itself is made of one piece of cedar-wood, the corners of which are square on the outside, and hollowed out from the inside so that the walls are quite thin. The top fits over this like the top of a pill-box. It is held to the box by means of a string, which passes through a hole in one end of the bottom, where it is knotted in, then up through a hole in the corresponding end of the top, over the top to the other end, and down through two holes, being knotted again under the box. The box is charred all over; but while being charred, it was evidently wrapped with spirals of cedar-bark at each end and in the middle, wherefore it appears now decorated with some light stripes. The top is hollowed out in the same way as the box. It is chamfered all round.

Besides these, round wooden quivers were used, closed at one end and open at the opposite end, which sometimes widened a little. These were made of two pieces of cedar-wood hollowed out on the outside and then fitted together.

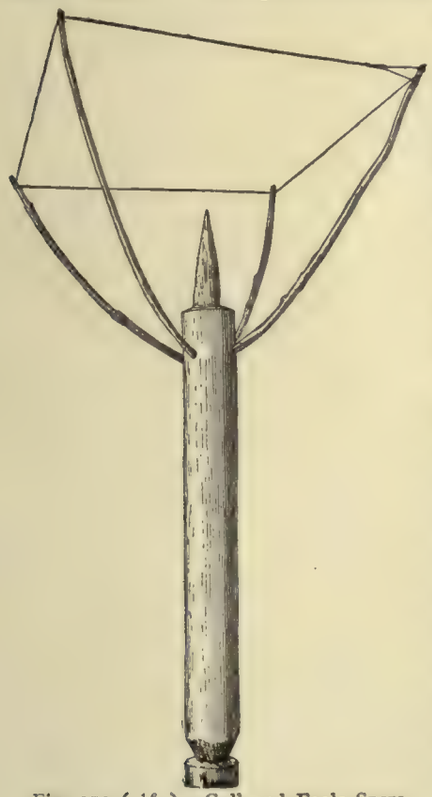


Fig. 172 ($\frac{1}{8}\frac{1}{1}\frac{6}{3}$). Gull and Eagle Snare.

In shooting, the bow is held horizontally. The bowstring is pulled with the first and second fingers, the arrow resting between these fingers, and the hand being under the bowstring. If the nock of the arrow is not good, the arrow is held with thumb and first finger.

Lasso. — In hunting mountain-goat the lasso is used. This is made of a stout cedar-branch which is twisted near the end. The tip of the branch is made into a loop (Fig. 170), which passes around the stout end of the branch. The hunter watches on a narrow mountain-goat trail, and lassos the animals as they pass by. This method of hunting is referred to in several of the traditions from Knight Inlet.[1]

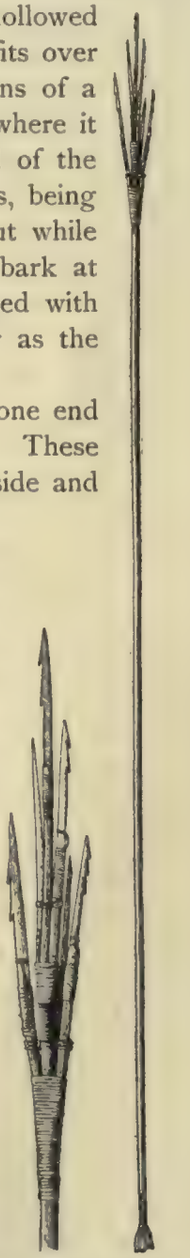


Fig. 173 ($\frac{1}{1}\frac{1}{1}\frac{2}{1}$). Bird-Spear. Nootka.

Hunting Birds. — When catching geese (pā′qa), a fire is built on a clay-covered board placed in the stem of the canoe. The steersman sits in

[1] See Vol. III of this series, p. 36.

front of the fire, and holds in his mouth a stick to which a mat is attached. This serves as a screen, by means of which the geese are kept in the light, and the canoe in the dark. When the hunters approach a flock of geese from a distance, they first screen and uncover the fire a few times. At first the geese are scared away by the glare of the light, but gradually they get accustomed to it. Then the canoe approaches quickly and cautiously. As long as the geese are kept in the light, they cannot see the dark canoe, and it is possible to come quite near to them. They always swim in a direction at right angles to the rays of the light. One of the hunters stands quietly in the bow of the canoe and holds a net (Fig. 171), which is about two metres square, with meshes about 10 cm. wide, and is stretched tightly over a frame. It has a handle, with which it is thrown over the birds. When the net falls over the flock of birds, the hunters paddle quickly so as to bring the canoe over the net. Then they take hold of the geese and twist off their heads. Wet, dark nights are best for this kind of hunting.

Ducks are caught in snares baited with herring-roe, and set under water at places where the birds feed. The hunters watch the snares from platforms that are erected on the beach. When the snares are full, the drowned ducks are gathered in.

A special device (Fig. 172) is used for catching eagles and gulls. This consists of a pointed stake, on the top of which bait is placed, and which is weighted down on the lower end so that it floats upright just on the surface of the water. A number of elastic twigs are inserted near the upper end, and around the tips of these a snare-string is expanded. When the bird tries to take the bait, the string slips off from the twigs and closes over its feet.

Sometimes birds are hunted with a many-pointed spear (Fig. 173), which is attached to a handle similar to the harpoon-shaft. It seems that this device is used particularly by the Nootka, but it seems that it has also been adopted to a certain extent by the Kwakiutl.

EXPLANATION OF PLATES XXXVII–LII.

PLATE XXXVII.

Fig. 1. Village at Salmon River.
Fig. 2. Village at Newettee.

PLATE XXXVIII.

Fig. 1. Head-Ring of Red Cedar-Bark of TEWĪ'x·i^{g}lak^{u}, with Feather. Tribe, Dzā'wadɛ̄nox^{u}. Cat. No. $\frac{16}{8815}$. (See Vol. III, p. 19.)
Fig. 2. Head-Ring of Red Cedar-Bark of TEWĪ'x·i^{g}lak^{u}, with Feather. Tribe, Dzā'wadɛ̄nox^{u}. Cat. No. $\frac{16}{8811}$. (See Vol. III, p. 7.)
Fig. 3. Head-Ring of Red and White Cedar-Bark of K·!ā'lamin. Tribe, Dzā'wadɛ̄nox^{u}. Cat. No. $\frac{16}{8815}$. (See Vol. III, p. 38.)
Fig. 4. Mask representing Double-Headed Sea-Monster. Tribe, Qwē'q^{u}sōt!ēnox^{u}. Length, 60 cm. Cat. No. $\frac{16}{8815}$. (See Vol. III, p. 210.)
Fig. 5. Mask representing the Bull-Head. Tribe, Qwē'q^{u}sōt!ēnox^{u}. Length, 118 cm. Cat. No. $\frac{16}{8815}$. (See Vol. III, p. 210.)
Fig. 6. Mask representing Raven of the Sea. Tribe, Gwa'waēnox^{u}. Length, 82 cm. Cat. No. $\frac{16}{8815}$. (Compare Plate L, Fig. 7; see also Vol. X, p. 71, line 2.)
Fig. 7. Mask representing Devil-Fish. Tribe, Qwē'q^{u}sōt!ēnox^{u}. Length, 54 cm. Cat. No. $\frac{16}{8814}$. (See Vol. III, p. 226.)
Fig. 8. Mask of Speaker of Nō'aqauē^{g}. Tribe, Qwē'q^{u}sōt!ēnox^{u}. Length, 32 cm. Cat. No. $\frac{16}{8814}$. (See Vol. III, p. 226.)
Fig. 9. Mask of Fisherman. Tribe, Qwē'q^{u}sōt!ēnox^{u}. Length, 26 cm. Cat. No. $\frac{16}{8815}$. (See Vol. III, p. 226.)
Fig. 10. DEnts!ēq. Tribe, Qwē'q^{u}sōt!ēnox^{u}. Length, 270 cm. Cat. No. $\frac{16}{8900}$. (See Vol. III, p. 231.)

PLATE XXXIX.

Fig. 1, *a–f*. Mask of Ghost, with Mouthpieces. Tribe, Hē'ɬtsaq^{u}. Length, 41 cm. Cat. Nos. $\frac{16}{8731}$ a, b; $\frac{16}{8803}$ a–d. (See Vol. III, p. 426.)
Fig. 2. Mask representing Woodman. Tribe, Hē'ɬtsaq^{u}. Length, 30 cm. Cat. No. $\frac{16}{8738}$. (See Vol. III, p. 429.)
Fig. 3. Neck-Ring of Ghost-Dancer. Tribe, Hē'ɬtsaq^{u}. Length, 62 cm. Cat. No. $\frac{16}{8735}$. (See Vol. III, p. 427.)
Fig. 4. Dzō'noq!wa Mask. Tribe, Hē'ɬtsaq^{u}. Length, 30 cm. Cat. No. $\frac{16}{8737}$. (See Vol. III, p. 431.)
Fig. 5. Double-Headed Wolf's Mask of Yaxstał. From Ḡwā'yastEms. Length, 45 cm. Cat. No. $\frac{16}{8814}$.
Fig. 6. Mask representing Laughing-Goose. Tribe, Dzā'wadɛ̄nox^{u}. Length, 23 cm. Cat. No. $\frac{16}{8814}$. (See Vol. III, p. 84.)
Fig. 7. Diver Mask. Length, 51 cm. Cat. No. $\frac{16}{8861}$.

PLATE XL.

Fig. 1. Whale Mask. Tribe, Gwa'waēnox^{u}. Length, 221 cm. Cat. No. $\frac{16}{8815}$. (See Vol. X p. 70, line 32.)
Fig. 2. Sea-Otter Carving. Tribe, Gwa'waēnox^{u}. Length, 170 cm. Cat. No. $\frac{16}{8815}$. (See Vol. X, p. 70, line 38.)

Fig. 3. Mask representing a Woman with Deformed Head, captured by the Awīk·ꞌēnoxᵘ, used in the ʟaolaxa. Length, 33 cm. Cat. No. $\frac{16}{8809}$.

Fig. 4. Mask representing Merman. Tribe, Hē'ɬtsaqᵘ. Length, 34 cm. Cat. No. $\frac{16}{7710}$. (See Vol. III, p. 436.)

Fig. 5. Shark Mask of ᵍnā'lanokumg·iᵍlakᵘ. Tribe, Gwa'waēnoxᵘ. Length, 157 cm. Cat. No. $\frac{16}{8913}$. (See Vol. X, p. 70.)

Fig. 6. Killer-Whale Mask for Winter Dance. Tribe, Koskimo. Length, 66 cm. Cat. No. $\frac{16}{8812}$.

Fig. 7. Killer-Whale Mask for Potlatch Dance. Tribe, Mā'malēleqala. Length, 85 cm. Cat. No. $\frac{16}{8857}$.

PLATE XLI.

Fig. 1. Mask representing the Heavenly Bird K·ꞌenk·ꞌō (Kulēle) [?] Tribe, Haʟwā'mis. Length, 100 cm. Cat. No. $\frac{16}{8853}$.

Fig. 2. Crane Mask. Length, 98 cm. Cat. No. $\frac{16}{8863}$.

Figs. 3–5. Mask representing, outside, Bull-Head; inside, Raven; inside of Raven, a man. Tribe, Gwa'waēnoxᵘ. Length, 89 cm. Cat. No. $\frac{16}{8913}$. (See Vol. X, p. 71, line 2.)

Fig. 6. Mask representing Kwē'xag·ila. Found in a cave at Ō'ᵍqumla. Length, 53 cm. Cat. No. $\frac{16}{8911}$.

Fig. 7. Mask of the Thunder-Bird Hā'das. Found in a cave at Ō'ᵍqumla. Tribe, ʟaʟasiqwala. Length, 42 cm. Cat. No. $\frac{16}{8913}$.

Fig. 8. Dawn Mask (Nax·nak·agᴇmɬ). Tribe, Nagô'mg·ilisala. Length, 43 cm. Cat. No. $\frac{16}{8843}$. (See Report of the U. S. National Museum for 1895, p. 484.)

Fig. 9. Mask representing Wak·as (Goose Island). Tribe, Aᵍwī'ʟꞌēdᴇxᵘ. Length, 36 cm. Cat. No. $\frac{16}{8811}$. (See Vol. III, p. 422, line 4.)

Fig. 10. War-Dance Mask (Hawī'nalaɬ). Tribe, Aᵍwī'ʟꞌēdᴇxᵘ. Length, 34 cm. Cat. No. $\frac{16}{8863}$.

Fig. 11. Mask Lᴇlqâ'lagᴇmɬ of Tsꞌᴇlqwalâ'ɬᴇla. Length, 36 cm. Cat. No. $\frac{16}{8893}$. (See Report of the U. S. National Museum for 1895, p. 665.)

PLATE XLII.

Fig. 1. Mask representing Sē'xapalis. Tribe, Koskimo. Length, 33 cm. Cat. No. $\frac{16}{8857}$. (See Vol. III, p. 389, line 2.)

Fig. 2, *a*, *b*. Skull Rattles. Tribe, Koskimo. Length, 22 cm. Cat. Nos. $\frac{16}{8895}$, $\frac{16}{8897}$. (See Vol. III, p. 385, line 40.)

Fig. 3. Mask of Yaxstaɬ. From Ġwa'yastᴇms. Length, 28 cm. Cat. No. $\frac{16}{8885}$.

Fig. 4. Mask of Tsîx·sī'wala's Daughter, the Wife of Qꞌō'moqwa. Tribe, Nō'lowidᴇxᵘ. Length, 29 cm. Cat. No. $\frac{16}{8877}$.

Fig. 5. Mask of Sēx·sewalikᵋ. Tribe, Koskimo. Length, 31 cm. Cat. No. $\frac{16}{8888}$. (See Vol. III, p. 389, line 2.)

Fig. 6. Mask representing the Forepaw of a Grisly Bear. Tribe, Haʟwā'mis (Kulēle). Length, 15 cm. Cat. No. $\frac{16}{8858}$ a.

Fig. 7. Hō'ẋʷhōkᵘ Mask. Tribe, Gwasila. Length, 107 cm. Cat. No. $\frac{16}{8975}$.

Fig. 8. Wolf's Head. Tribe, Koskimo. Length, 65 cm. Cat. No. $\frac{16}{8873}$.

Fig. 9. First Head-Ring of Hayalik·alaɬ. Tribe, Ma'malēleqala. Length, 29 cm. Cat. No. $\frac{16}{4764}$.

Fig. 10. Head-Ring of Hayalik·alaɬ. Tribe, Qꞌō'moyuē. Length, 29 cm. Cat. No. $\frac{16}{4784}$.

Fig. 11. Killer-Whale Mask (Tᴇguxste). Tribe, Nā'kꞌwax·daᵍxᵘ. Length, 49 cm. Cat. No. $\frac{16}{8968}$.

Fig. 12. Wolf Mask. Length, 28 cm. Cat. No. $\frac{16}{8857}$.

Fig. 13. Mask representing Knee-Cap of Grisly Bear. Tribe, Koskimo. Length, 33 cm. Cat. No. $\frac{16}{8858}$.

PLATE XLIII.

Fig. 1. Whale Dish obtained by Apōʟ. Tribe, Koskimo. Length, 84 cm. Cat. No. $\frac{16}{8895}$.

Fig. 2. Dish representing Finback Whale. Tribe, Koskimo. Length, 122 cm. Cat. No. $\frac{16}{8698}$.

Fig. 3. Killer-Whale Dish (ᵍnā′lanokumg·iᵍlakᵘ). Tribe, Gwa′waēnoxᵘ. Length, 73 cm. Cat. No. $\frac{16}{8528}$.
Fig. 4. Whale Dish. Tribe, Koskimo. Length, 64 cm. Cat. No. $\frac{16}{8173}$.
Fig. 5. Killer-Whale Dish. Tribe, Koskimo. Length, 145 cm. Cat. No. $\frac{16}{8168}$.
Fig. 6. Ladle. Tribe, Dzā′wadɛ̄enoxᵘ. Length, 186 cm. Cat. No. $\frac{16}{8428}$.
Fig. 7. Ladle. Tribe, Gwasila. Length, 85 cm. Cat. No. $\frac{16}{9978}$.
Fig. 8. Ladle. Tribe, Dzā′wadɛ̄enoxᵘ. Length, 142 cm. Cat. No. $\frac{16}{8418}$.
Fig. 9. Wolf and Eagle Dish. Tribe, Kwakiutl. Length, 57 cm. Cat. No. $\frac{16}{8573}$.
Fig. 10. Sea-Otter and Eagle Dish. Tribe, Nā′k!wax·daᵍxᵘ. Length, 47 cm. Cat. No. $\frac{16}{8985}$.
Fig. 11. Sea-Otter Dish. Tribe, Nā′k!wax·daᵍxᵘ. Length, 44 cm. Cat. No. $\frac{16}{8981}$.
Fig. 12. Sī′siuL Dish. Tribe, Dzā′wadɛ̄enoxᵘ. Length, 79 cm. Cat. No. $\frac{16}{8409}$.
Fig. 13. Killer-Whale Dish. Length, 148 cm. Cat. No. $\frac{16}{8168}$.

PLATE XLIV.

Fig. 1. Seal Dish. Tribe, Koskimo. Length, 85 cm. Cat. No. $\frac{16}{8687}$.
Fig. 2. Sea-Eagle Dish. Length, 62 cm. Cat. No. $\frac{16}{8161}$ (?).
Fig. 3. Young-Seal Dish. Tribe, Koskimo. Length, 69 cm. Cat. No. $\frac{16}{8172}$.
Fig. 4. Seal Dish. Tribe, Koskimo. Length, 62 cm. Cat. No. $\frac{16}{8173}$ a, b.
Fig. 5. Double-Headed Wolf Dish. Tribe, Koskimo. Length, 166 cm. Cat. No. $\frac{16}{8690}$.
Fig. 6. Sea-Eagle Dish. Tribe, Dzā′wadɛ̄enoxᵘ. Length, 88 cm. Cat. No. $\frac{16}{8987}$.
Fig. 7. Large Shallow Dish (Sax·sak). Taken in war from the Aᵍwik·ᵍenoxᵘ. Length, 143 cm. Cat. No. $\frac{16}{8811}$.
Fig. 8. Grisly Bear Dish. Tribe, Dɛna′x·daᵍxᵘ. Length, 64 cm. Cat. No. $\frac{16}{8403}$.
Fig. 9. Bladder Dish. Tribe, Koskimo. Length, 28 cm. Cat. No. $\frac{16}{8128}$.
Fig. 10. Pipe, used with Many Stems. Tribe, Kwakiutl. Length, 18 cm. Cat. No. $\frac{16}{8130}$.
Fig. 11. Dish representing Devil-Fish, and belonging to Hadaho. Tribe, Koskimo. Length, 188 cm. Cat. No. $\frac{16}{8161}$ (?).
Fig. 12. Large Dzō′noq!wa Dish with Face, Small Dish representing Breasts and Navel. Length, 259 cm. Cat. No. $\frac{16}{9013}$.

PLATE XLV.

Fig. 1. Grave Monument representing Hō′χᵘhōkᵘ. Tribe, Kwakiutl. Length, 335 cm. Cat. No. $\frac{16}{9078}$. (See Vol. III, p. 271; cf. Report of the U. S. National Museum for 1895, Plate III, opposite p. 336.)
Fig. 2. House-Post of Lē′laxa. Tribe, Nagômg·ilisala. Length, 457 cm. Cat. No. $\frac{16}{7883}$. (See Report of the U. S. National Musem for 1895, p. 414.)
Fig. 3. Part of House-Beam used as Grease-Trough. Tribe, Nimkish, Alert Bay. Length, 304.7 cm. Cat. No. $\frac{16}{8651}$.
Fig. 4. Speaker's Post. Tribe, Nagômg·ilisala. Length, 289.2 cm. Cat. No. $\frac{16}{7888}$. (See Report of the U. S. National Museum for 1895, p. 379).
Fig. 5. House-Post representing Sea-Lion. Tribe, Nagômg·ilisala. Length, 365.3 cm. Cat. No. $\frac{16}{7881}$. (See Report of the U. S. National Museum for 1895, p. 379.)

PLATE XLVI.

Fig. 1. Large Carving representing Caricature of Speaker. Tribe, Koskimo. Length, 228.5 cm. Cat. No. $\frac{16}{8272}$.
Fig. 2. Mask representing Speaker. Length, 152.3 cm. Cat. No. $\frac{16}{9013}$.
Fig. 3. Mask representing Chief Nɛxnēg·ilitsō. The head-ornament represents the double-headed serpent. Tribe, Koskimo. Length, 106.6 cm.
Fig. 4. Figure representing Chief throwing away Property in Potlatch. Tribe, Koskimo. Length, 152.3 cm. Cat. No. $\frac{16}{8851}$.
Fig. 5. Figure used for ridiculing Chief. Tribe, Qwē′qᵘsot!ēnoxᵘ. Length, 152.3 cm. Cat. No. $\frac{16}{8381}$.

Fig. 6. House-Post representing the Thunder-Bird. Tribe, Qwē'q"sotlēnox". Length, 319.8 cm. Cat. No. $\frac{16}{9774}$. (See Vol. III, p. 247; also Report of the U. S. National Museum for 1895, Plate XXII, opposite p. 414.)

Fig. 7. House-Post of Qwē'q"sotlēnox". Length, 350.3 cm. Cat. No. $\frac{16}{9775}$. (See Vol. III, p. 247; also Report of the U. S. National Museum for 1895, Plate XXII, opposite p. 414).

Fig. 8. Figure representing Chief Speaker. Used in Potlatch. Tribe, Koskimo. Length, 137 cm. Cat. No. $\frac{16}{8154}$.

Fig. 9. Figure representing Copper-Breaker. Used at Potlatch. Tribe, Koskimo. Length, 281.8 cm. Cat. No. $\frac{16}{8151}$.

PLATE XLVII.

Fig. 1. Figure representing the Speaker of Qamalag·i^{s}lak". Tribe, Nā'k!wax·da^{s}x". Length, 122 cm. Cat. No. $\frac{16}{9005}$.

Fig. 2. Figure used in Potlatch, symbolizing the Greatness of the Chief, the Child in the Arms of the Figure representing the Size of other Chiefs as compared to the One who gives the Feast. Tribe, K"kwā'kum, Kwakiutl. Length, 103 cm. Cat. No. $\frac{16}{8139}$.

Fig. 3. Figure representing Chief's Attendant killing Slaves and breaking Coppers. Tribe, Łau'itsis. Length, 152 cm. Cat. No. $\frac{16}{8139}$.

Fig. 4. Figure of Chief's Speaker, used at a Potlatch. Tribe, Kwakiutl. Length, 125 cm. Cat. No. $\frac{16}{5397}$.

Fig. 5. Carving representing the Sun. From the Top of a House-Pole. Tribe, Sī'sînłē^{s}. Length, 87 cm. Cat. No. $\frac{16}{8085}$.

Fig. 6. Figure representing the Counter of Blankets holding a Copper. Tribe, Gwa'waēnox". Length, 147 cm. Cat. No. $\frac{16}{8406}$.

Plate XLVIII.

Fig. 1. Eagle from Top of a House-Pole. Tribe, Nagô'mg·ilisala. Length, 89 cm. Cat. No. $\frac{16}{8162}$.

Fig. 2. Eagle from Top of a House-Pole. Tribe, Nagô'mg·ilisala. Length, 89 cm. Cat. No. $\frac{16}{8515}$.

Fig. 3. Raven Carving from Top of House-Pole. Tribe, Łau'itsis. Length, 72 cm. Cat. No. $\frac{16}{8395}$.

Fig. 4. Carving representing Grisly Bear holding a Copper. Tribe, Koskimo. Length, 165 cm. Cat. No. $\frac{16}{8256}$.

Fig. 5. Carving representing Chief's Speaker distributing Property and holding a Copper under his Arm. Tribe, Dena'x·da^{s}x". Length, 104 cm. Cat. No. $\frac{16}{8407}$.

Fig. 6. Carving representing Grisly Bear. Tribe, Koskimo. Length, 176 cm. Cat. No. $\frac{16}{8251}$.

PLATE XLIX.

Fig. 1. Mask representing Q!ō'moqwa. Tribe, Nō'lowidex". Length, 38 cm. Cat. No. $\frac{16}{2378}$. The ornaments of the mask are developed in the style characteristic of Haida and Tsimshian carvings. The tail of Q!ō'moqwa (a sea-spirit) is represented by the face over the forehead of the mask. Arms and hands are represented to the right and left of the forehead; legs with the attached fins and feet, to the right and left of the cheeks; and the fins, under the chin. In this way the representation resembles that of the sea-spirit of the Haida.

Fig. 2. Mask representing Q!ō'moqwa. Tribe, A^{s}wī'ʟ!ēdex". Length, 75 cm. Cat. No. $\frac{16}{2370}$. The feet are represented to the right and left of the forehead; while the fins, developed in the form of raven-beaks, are shown to the right and left of the cheeks. A design representing the devil-fish is shown over the forehead, which is surrounded by a revolvable carving representing the killer-whale.

Fig. 3. Mask representing Owner-of-Southeast-Wind (Mɛɬā'lanuk^{u}). Tribe, Nā'k!wax·da^{g}x^{u}. Length, 34 cm. Cat. No. $\frac{16}{17\,39}$. (See Vol. III, pp. 350–353.)

Fig. 4. Mask representing the Double-Headed Serpent. Tribe, Kwakiutl. Length, 186 cm. Cat. No. $\frac{16}{8\,76\,8}$. (See Vol. X, p. 110.)

The face in the middle represents the "man in the middle of the serpent," with his two plumes; at each end are plumed serpent-heads with movable tongues, which by means of strings can be pulled back and out. The two sides of the mask can be folded forward and backward. Used in the winter dance in the pantomimic representation of the Mink legend.

Fig. 5. Mask representing the Earthquake (Xwa'exwē). Tribe, Qwē'q^{u}sōt!ēnox^{u}. Length, 46 cm. Cat. No. $\frac{16}{8\,38\,2}$.

Originally a mask of the Comox. Obtained, according to tradition, by T!ē'sɛmg·it (Vol. III, pp. 236 et seq.). The protruding eyes, nostrils, and the lolling tongue, are characteristic of the mask. The three bird-heads on top are generally raised on neck-like straight supports.

Fig. 6. Nightmare-Bringer Nest Mask (Hamanēkwi'la Qɛ'lxasɛmɬ). Tribe, Dzā'wadɛēnox^{u}. Length, 86 cm. Cat. No. $\frac{16}{8\,77\,1}$. (See Vol. III, p. 99, line 34.)

Fig. 7. Laughing Mask (Dɛdā'ɬɛlaɬɛmɬ), for ʟaō'laxa Dance. Tribe, A^{g}wī'L!ēdɛx^{u}. Length, 49 cm. Cat. No. $\frac{16}{2\,37\,5}$.

PLATE L.

Fig. 1. Mask of Wasp-Dancer. Said to belong to the Qā'wadeleqala. Length, 27 cm. Cat. No. $\frac{16}{8\,52\,4}$. (See Vol. X, pp. 36 et seq.)

Figs. 2 and 4. Thunder-Bird Mask of ^{g}nā'lanokumg·i^{g}lak^{u}, Open and Closed. Tribe, Gwa'waēnox^{u}. Length, 44 cm. Cat. No. $\frac{16}{8\,53\,3}$. (See Vol. X, p. 79 [?].)

Fig. 3. Grisly Bear Mask. Tribe, Koskimo. Length, 35 cm. Cat. No. $\frac{16}{8\,39\,9}$.

Fig. 5. Mā'dɛm Mask of ^{g}nā'lanokumg·i^{g}lak^{u}. Tribe, Gwa'waēnox^{u}. Length, 46 cm. Cat. No. $\frac{16}{8\,52\,1}$. (See Vol. X, pp. 77 et seq.)

Fig. 6. Ts!ɛlqualōɬɛla Mask. Tribe, Koskimo. Length, 40 cm. Cat. No. $\frac{16}{8\,22\,7}$. (See Report of the U. S. National Museum for 1895, pp. 665 et seq.)

Fig. 7. Mask representing Raven of the Sea. Tribe, Gwa'waēnox^{u}. Length, 82 cm. Cat. No. $\frac{16}{8\,52\,9}$. (Compare Plate XXXVIII, Fig. 6; see also Vol. X, p. 71, line 2.)

Fig. 8. Grisly Bear Mask (?). Tribe, Qwē'q^{u}sot!ēnox^{u}. Length, 39 cm. Cat. No. $\frac{16}{8\,39\,3}$.

PLATE LI.

Figs. 1 and 2. Wolf and Raven Mask, Open and Closed. Tribe, Q!ō'moyuē. Length, 46 cm. Cat. No. $\frac{16}{2\,35\,9}$.

Worn in potlatch dance by the clan Yaai'x·agamē^{g}, representing the ancestor of the clan.

Figs. 3 and 4. Double Mask representing the Ancestor of the Clan (Ts!ētsēɬwalagamē^{g}), Closed and Open. Tribe, Nimkish. Length, 58 cm. Cat. No. $\frac{16}{8\,77\,0}$.

Fig. 5. Mask representing ^{g}nā'lanokumg·i^{g}lak^{u}. Tribe, Gwa'waēnox^{u}. Length, 42 cm. Cat. No. $\frac{16}{8\,41\,0}$. (See Vol. X, pp. 60 et seq.)

The two faces are supposed to represent the person in different moods.

Fig. 6. Raven Mask (Ga^{g}wē'). Used in the ʟaolaxa Dance. Tribe, Nō'lowidɛx^{u}. Length, 84 cm. Cat. No. $\frac{16}{2\,38\,1}$.

PLATE LII.

Fig. 1. "Benumbing Mask" (Dō'lɛmx·itīla). Tribe, A^{g}wī'L!ēdɛx^{u}. Length, 30 cm. Cat. No. $\frac{16}{2\,38\,4}$. (See Vol. III, pp. 431 et seq. [?].)

Fig. 2. Mask of Ts!ā'qamē^{g}. Tribe, Qwē'q^{u}sot!ēnox^{u}. Length, 60 cm. Cat. No. $\frac{16}{2\,31\,1}$. (See Vol. III, pp. 165 et seq.)

Apparently the wings of this mask represent tail and fins of the killer-whale.

Fig. 3. Dzō'noqᵘwa Mask. Tribe, Kwakiutl. Length, 32 cm. Cat. No. $\frac{16}{2378}$.

Fig. 4. Mask representing Whale and Thunder-Bird. Tribe, Kwakiutl. Length, 172 cm. Cat. No. $\frac{17}{8761}$. (See Vol. III, pp. 312 et seq.)

Fig. 5. Dog Mask for the Walasᵉaxaā'kᵘ. Tribe, Dzā'wadɛ̄nox". Length, 58 cm. Cat. No. $\frac{16}{8124}$. (See Vol. X, p. 42.)

Fig. 6. Grisly Bear Mask. Tribe, Dzā'wadɛ̄nox". Length, 67 cm. Cat. No. $\frac{16}{5561}$. (See Vol. III, pp. 25 et seq.)

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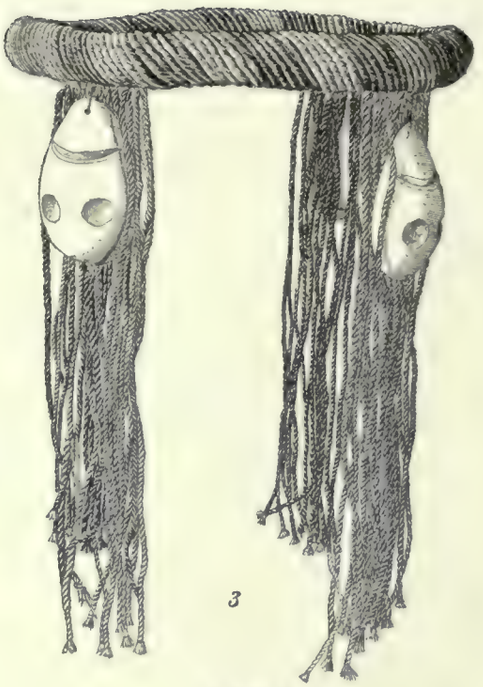

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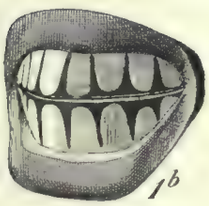

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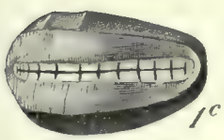

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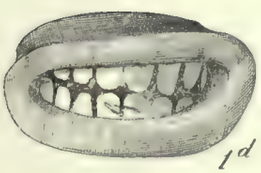

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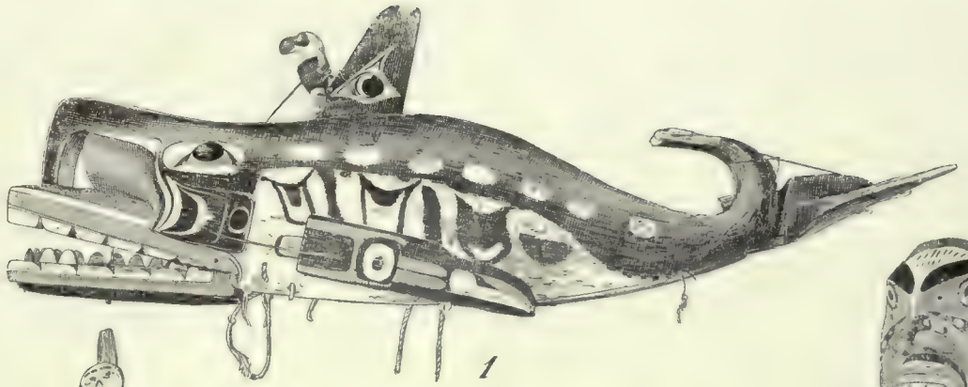
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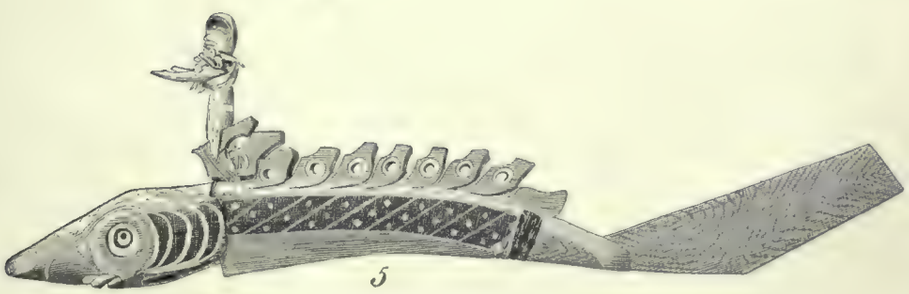
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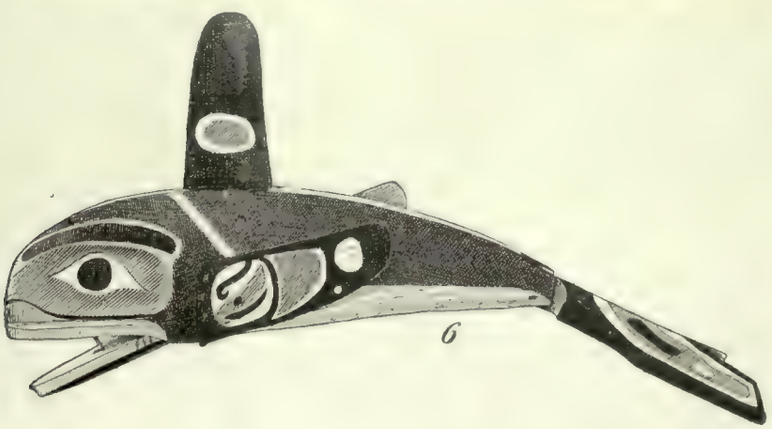
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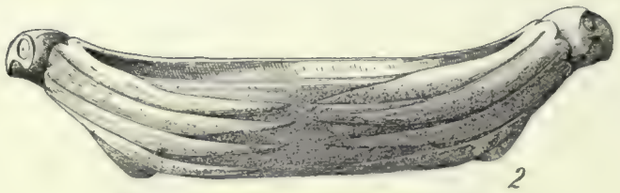

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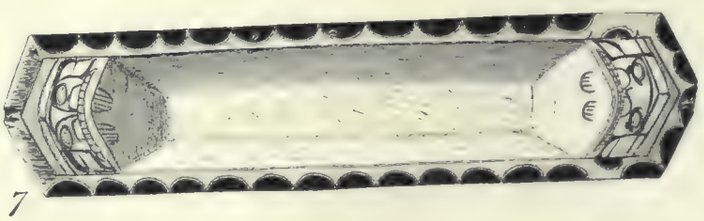

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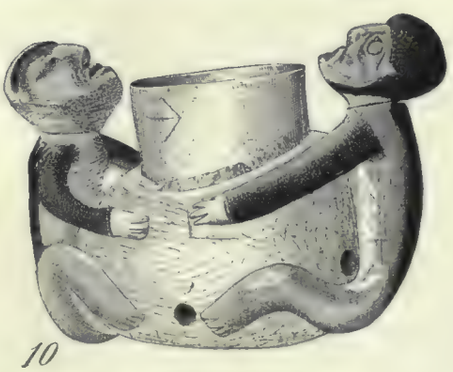

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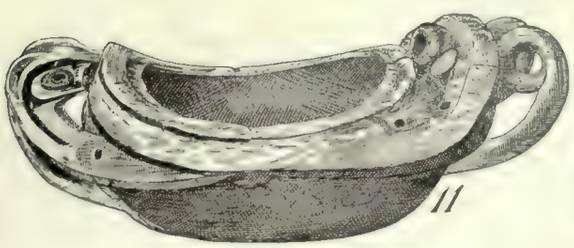

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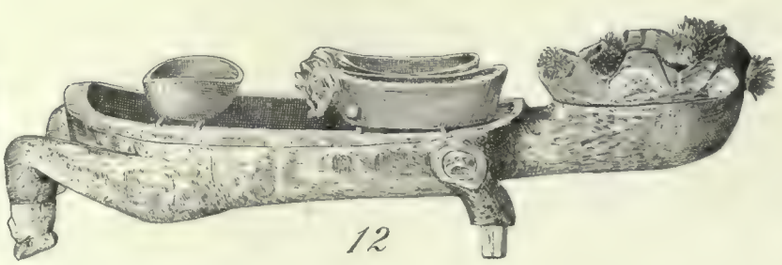

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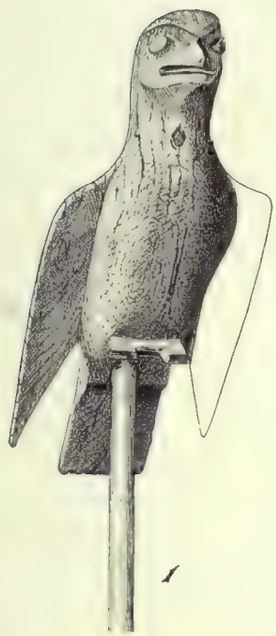

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